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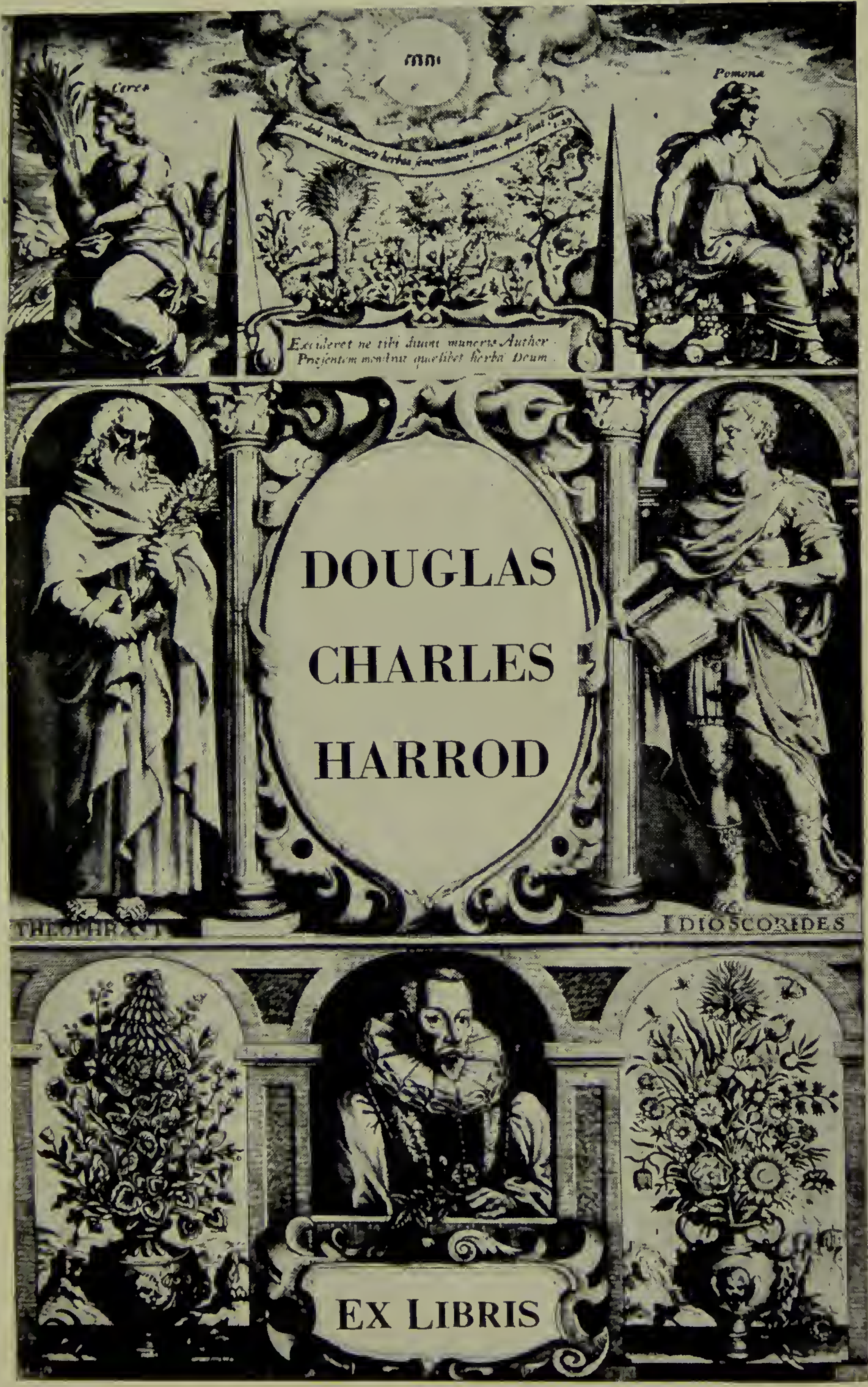Ceres
Pomona
Excideret ne tibi diuini muneris Author
Præsentem monstrat quaelibet herba Deum.
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Wilfrid E. Bambrough.

July, 1894.

Berthollets Law of Precipitation "When we cause two salts to react by means of a solvent, if in the course of double decomposition a new salt *can* be produced less soluble than those we have mixed, this salt will be produced.

Evaporation is the term applied to the operation of separating by heat a volatile from a non-volatile substance with the object of obtaining the latter.

Dessiccation or Exsiccation is applied to the proc of removing water or other liquid from a more or less da solid not in solution, or from crystalline salts.

Calcination is the operation of removing chemica combined water or other volatile constituents (as CO_2) fro solids by the application of a strong heat. If applie together with a current of air this operation is frequently termed roasting and is a common preliminary in the treatment of ores. The term calcination is only applied when the substance does not melt.

Distillation is the operation of separating a more volatile from a less volatile substance with the object o obtaining the former. If the product is a solid the operation is termed *Sublimation*.

Decantation is the act of removing a clear liqui from an insoluble compound (solid or liquid) withou the use of a filter.

Official Products of Distillation

Volatile oils, (except Ol: Limonis)
Æther Purus
Alcohol Ethylicum
Spiritus Ammoniæ Aromaticus
" " Foetidus
" Armoraciæ Compositus.

(2) Distillation accompanied by chemical action in the still.
Nitric Acid
Phosphoric Acid
Æther
Æther Aceticus
Chloroform
Spiritus Ætheris Compositus
" Ætheris Nitrosi
Hydrobromic acid
Hydrocyanic acid.

THE

BRITISH PHARMACOPŒIA,

1885.

(3) Fractional Distillation.
Alcohol Amylicum
Amyl Nitris
Acidum Carbolicum
Butyl Chloral
Spiritus Vini Rectificatus.

(4) Destructive Distillation
Acidum Aceticum
Creasotum
Ol Cadinum
Pix Liquidum.

Allotropism, is a term used to indicate the fact that the same elementary substance can occur endowed with permanen ly different physical properties + chemical activities E.g. C.P. S.O

Isomerism. When two or more chemical compounds are found containing the same elements, united in the same proportions having identical molecular weights, and while differing in their chemical + physical relations are of a similar chemical type, they are said to be isomeric. Eg. Starch + cellulo

Metamerism, is the term applied when compounds having identical molecular weights +c belong to different classes of substances. E.g. Acetic Ether + Butyric Acid.

Polymerism, Bodies belonging to the same or different classes + possessing the same percentage composition but having molecular weights which are simple multiples of each other are said to be polymeric
E.g. Members of the $C_N H_{2N}$ group Aldehyde + Paraldehyde C_2H_2 ; C_6

Polymorphism. is used to indicate the fact that one + the same substances occurs in more than one crystalline form. E.g. C + S.

Amorphous. When a substance has no crystalline form it is designated amorphous.

THE

BRITISH PHARMACOPŒIA,

PUBLISHED UNDER THE DIRECTION OF

THE GENERAL COUNCIL OF
MEDICAL EDUCATION AND REGISTRATION
OF THE UNITED KINGDOM,

PURSUANT TO THE ACTS
XXI. & XXII. VICTORIA, CAP. XC. (1858)
AND XXV. & XXVI. VICTORIA, CAP. XCI. (1862).

1885.

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THE GENERAL COUNCIL

OF

MEDICAL EDUCATION AND REGISTRATION OF THE UNITED KINGDOM.

January, 1885.

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Registrar.

hen coal is destructively distilled:-

oal gas H, CH_4, C_2H_4 etc
Ammoniacal liquor (a source of ammonium salts in commerce)
coal tar
coke.

From the coal tar by fractional distiliation are obtained:-

1st runnings mainly paraffins with only 6% C_6H_6
Light oils chiefly C_6H_6 & $C_6H_5CO_3$
Middle oils from which Phenol & napthaline are abstracted
The heavy oil or dea oil which remains in the retort.

Extraction of Phenol. The middle oil is agitated with a strong solution of soda; the alkaline layer, which is the bottom layer (the top layer being hydrocarbo is drawn off & this is decomposed with H_2SO_4 Crude phenol separates. This is run over $CaCl_2$ which absorbs water, & submitted to fractional distillation & the product which distils over @ 370° F. is collected crystallized in centrifugal drums + yields pure phenol.

⁎ *For lists of additions to, omissions from, and other alterations as regards the Pharmacopœia of* 1867, *see pages* xxiii *to* xxviii.

Spiritus Vini Rect: A quantity of water @ 140°-150 is run into the mash tun + ground malt + meal is adde The mash tun is provided with a perforated bottom; + als a vertical shaft with horizontal mechanism. The liquor is thoroughly agitated ~~[illegible]~~ + percolates into the true bottom the tun. During the operation of mashing, the diastase diss. in the tepid water + reacts on the starch of the grain conver it into dextrine + maltose. Fermentation is produced by adding 2% brewer's yeast to the wort. During the 1st few da the tuns are exposed to the air, after this they are covered tigh to exclude air. Temp most favourable 70°- 75° F. Sugar subs + dextrine are converted into $CO_2 + C_2H_5\text{-}OH$ with a small proportion of glycerine + succinic acid. The yeast is removed + the liquid fractionally distilled. The first runni contain aldehyde 2nd Alcohol 3rd constitutes fusel oil. The middle portion is again distilled to get pure spirit. Yield of alcohol = about 48% of sugar taken $C_{12}H_{22}O_{11} + H_2O = 2C_6H_{12}O_6$

$$C_{12}H_{24}O_{12} = 4C_2H_5\text{-}OH + 4CO_2$$

$$C_6H_{10}O_5 + H_2O = C_6H_{12}O_6 - 2C_2H_5\text{-}OH + 2CO_2.$$

Action of H_2SO_4 on C_2H_5OH.

In cold $C_2H_5\text{-}HSO_4$; when heated upto 127°C – 154°C
$(C_2H_5)_2O$ is evolved
From 154°C – 162°C :- Oil of wine distils
162°C – 180°C :- Olefiant gas is evolved.
In distilling these two substances there is always more or less darkening in colour produced in fluid left in retort.

NOTICE.

The first impression of 20,000 copies of the British Pharmacopœia (1885) having been exhausted, it has been found necessary to issue a Reprint.

In so doing, opportunity has been taken to correct the Errata of which a list has been separately printed for the use of those already in possession of the work. Some verbal alterations and cross-references have also been made.

The List of Corrections can be obtained on application to the Publishers, or at the Office of the General Medical Council, 299 Oxford Street, London.

October, 1886.

The Second Reprint of the Pharmacopœia having being exhausted, a Third is now issued.

Synonyms for Tinctura Camphoræ Composita and for Tinctura Opii have been introduced.

November, 1888.

The Fourth and Fifth Reprints having been exhausted, a Sixth is now issued.

April, 1893.

An alcohol is the hydrate of an organic radical.

Official alcohols:-

Amylic alcohol	$C_5H_{11}OH$
Ethylic alcohol	C_2H_5OH
Glycerol	$C_3H_5(OH)_3$
Mannitol	$C_6H_8(OH)_6$
Menthol	$C_{10}H_{19}OH$.

PREFACE

TO THE

BRITISH PHARMACOPŒIA, 1885.

The interval which has elapsed since the publication of the British Pharmacopœia in 1867 has been productive of changes relating to the matter and objects of that work which have rendered its revision and reproduction necessary. Not only have many new remedies been introduced into medical practice, which seemed to call for official recognition, but of those which had already received such recognition there are many with regard to which much extended knowledge has been acquired as to their sources and scientific characters, as well as of the methods by which they may be best prepared for use in medicine.

In the production of the present edition of the Pharmacopœia pains have been taken to bring the whole of the matter up to the existing state of knowledge. No change has been made in the arrangement or the general construction of the work. In the method adopted for representing the composition, and in some cases the assumed constitution, of certain bodies of definite chemical nature by symbolic formulæ, the old system, which, as well as the new, was previously adopted, having been now completely superseded, has been omitted. Some change has been made in chemical nomenclature, the object of which has been to remove previously existing inconsistencies, and to reconcile the names used in the Pharmacopœia with one another, and, at least in principle, with those employed by modern scientific chemists. In making this change it has been necessary to provide Latin names which admit of being abbreviated, as they usually are in medical prescriptions, without rendering the meaning obscure. As in previous editions, both the English and Latin names have been selected as those commonly used and most familiar, but not necessarily as literal translations one of the other. The nomenclature of alkaloids has been made to harmonise with that adopted in other pharmacopœias and in pharmacy generally.

An attempt has been made to introduce a method of setting out the relative quantities of ingredients used in some of the processes by supplementing the respective weights and measures by proportional parts. It was at first proposed that the use of parts should altogether supersede that of specified weights and measures, but it was thought better, at least for the present, merely to supplement weights and measures by parts where the context permits and where this can be made more clearly to show the proportion which the several parts bear to each other. Wherever this method is employed, the term 'parts' signifies parts by weight, and the term 'fluid parts' signifies the volume of an equal number of parts of water.

Among the objects contemplated in revising the processes for the various preparations has been that of promoting increased uniformity of strength and other properties, especially in certain of the more active medicines. It will be found that this has been successfully provided for in several instances. One of the means by which results of this kind are obtained in the action of liquid on solid ingredients consists in reducing the solid matter which is to be used to a nearly uniform state of disintegration, and then passing it through a sieve of a particular-sized mesh. The degrees of disintegration are represented by numbers ranging from No. 20 to No. 60, these numbers indicating the numbers of parallel wires of ordinary thickness within a linear inch forming the meshes of the sieves used. Greater precision has been given to the descriptions of some of the bodies referred to by appending specific gravities and solubilities in cases where these were not previously included. The application of reagents for characterising products and for the detection of impurities has been considerably extended, and many fresh synonyms have been added. Temperature is still given in Fahrenheit's degrees, but in every case the equivalent on the Centigrade scale is added in brackets.

In the description of chemical substances now for the first time introduced into the Pharmacopœia, unless some special reason has existed for giving full and detailed processes, it has been deemed sufficient to refer to their production in general terms, while their identity is established by their characters and reactions with chemical tests.

It will be observed that the amount of matter has been considerably increased—to the extent of nearly a hundred pages—and this has been caused by the introduction of a large number of new medicines. More might have been added, but it was felt with regard to most of them that they had not been sufficiently recognised by the medical profession, whilst in regard to others it was considered that there were already in the Pharmacopœia agents having like properties and of equal if not of greater value.

The Council beg to acknowledge important suggestions and assistance received from several of the medical authorities, from scientific bodies, medical practitioners, and from pharmacists.

The Council think it right further to say that, in the preparation of this edition of the Pharmacopœia, they have had the advantage of the valuable services of the following gentlemen who have acted as

Editors.

Professor REDWOOD.
Professor BENTLEY.
Professor ATTFIELD.

The general supervision of the preparation of the work has been entrusted to a Committee consisting of the following members of the Council:—

Dr. QUAIN, *Chairman.*
Sir HENRY W. ACLAND, *President of the Council.*
EDWARD BRADFORD, Esq.
THOMAS COLLINS, Esq.
Dr. HALDANE.
Professor RAWDON MACNAMARA.
Sir HENRY A. PITMAN.
Dr. AQUILLA SMITH.

August 1885.

PREFACE

TO THE

BRITISH PHARMACOPŒIA, 1867.

By the Medical Act of 1858, section 54, it is enacted ' that the General Council shall cause to be published under their direction a Book containing a list of medicines and compounds, and the manner of preparing them, together with the true weights and measures by which they are to be prepared and mixed, and containing such other matter and things relating thereto as the General Council shall think fit, to be called "British Pharmacopœia;" and the General Council shall cause to be altered, amended, and republished, such Pharmacopœia as often as they shall deem it necessary.'

And by a subsequent Act, the 25th and 26th Victoria, cap. 91, which recites amongst other things that different Pharmacopœias have hitherto been in use in England, Scotland, and Ireland, and that the Pharmacopœia to be published by the General Council is intended to supersede the above-mentioned Pharmacopœias, it is enacted that ' the British Pharmacopœia, when published, shall for all purposes be deemed to be substituted throughout Great

Britain and Ireland for the several above-mentioned Pharmacopœias; and any Act of Parliament, Order in Council, or custom relating to any such last-mentioned Pharmacopœias shall be deemed, after the publication of the *British* Pharmacopœia, to refer to such Pharmacopœia.'

The present work is produced in compliance with, and under the sanction and authority of, these Acts of Parliament. It is intended to afford to the members of the Medical Profession and those engaged in the preparation of medicines throughout the British Empire one uniform standard and guide, whereby the nature and composition of substances to be used in medicine may be ascertained and determined. The Council have endeavoured to include in it all such remedies as the existing state of medical practice seemed to require. Whilst it has been necessary to establish uniformity of strength and composition in medicines which, although bearing the same names, have heretofore differed in these respects, according as they have been used in different parts of the kingdom, care has been taken, as far as possible, to provide for the requirements and to meet the wishes of all those for whose use the British Pharmacopœia is published.

In preparing the first edition of the work it was necessary to engage the services of Committees in London, Edinburgh, and Dublin, who had to execute the difficult task, which had previously been attempted in vain, of reducing to one standard the processes and descriptions of three different Pharmacopœias, and, what was still more difficult, of reconciling the varying usages in pharmacy and prescriptions of the people of three countries hitherto in these respects separate and independent. But the important work of amalgamation having been effected, and national differences reconciled, in some cases at the cost of mutual concession, it has been thought desirable, in preparing a new edition, to submit the work to a general revision with the view of removing any defects that might be discovered, and of supplying ascertained deficiencies.

In this edition, accordingly, some medicines not included in the former one have been introduced, some names by which medicines have been designated have been changed, some processes have been altered, and descriptions have been modified.

A new arrangement of the matter has been adopted, by which the descriptions hitherto comprised under a separate head of Materia Medica are included in one list with Preparations and Compounds, the whole being arranged in alphabetical order. This plan has already been adopted in several of the foreign Pharmacopœias. It will be found to facilitate reference and to obviate an inconvenience that has been experienced from a portion of the information relating to certain medicines being contained in a different part of the work from that in which the processes for their production are described.

The Pharmacopœia having for its object, not so much the selection as the definition of substances which the physician prescribes, and which are required to be kept at one safe and uniform standard of strength and composition, some remedies may have been retained in it which have ceased to be in general use, and others introduced the value of which, although well attested, has not yet been generally recognised.

The doses of all the more important medicines are now for the first time appended to the other information concerning them, the quantities stated under this head being intended to represent average doses, in ordinary cases, for adults. These doses are indicated in compliance with a generally expressed wish. They are not authoritatively enjoined by the Council, and the practitioner must rely on his own judgment and act on his own responsibility in graduating the doses of any therapeutic agents which he may wish to administer to his patients. Important changes in the strength of medicines, and especially of powerful medicines, are specified in footnotes.

Pains have been taken to make the descriptions of all the substances referred to in the work sufficiently comprehensive and minute to afford a clear indication of what the medicines of the Pharmacopœia are intended to be, and to enable those who are engaged in their administration to determine the identity and test the purity of such as are met with in commerce. In the descriptions of natural products reference is made to their sources. When they belong to the animal or vegetable kingdoms, the scientific names of the animals or plants yielding them, if known, are given, in addition to the names under which they are used in medicine; and reference is generally made, in the case of plants, to the best authorities for the scientific descriptions of them, and to works in which correct figures may be found. Mineral substances are described with reference to their chemical characters and composition; and generally, in the descriptions of products, whether natural or manufactured, the distinguishing characters and tests are included, where such can be referred to with advantage. There are some medicines for the preparation of which it is essential that precise directions should be given, namely such as can only be obtained by some peculiar process, and with the exact composition of which we are but imperfectly acquainted: processes are also, in most instances, appended to the descriptions of chemical compounds of definite and known composition, which admit of exact definition in other ways. In many of the latter cases, however, it is left optional with the manufacturer to use the processes given, or others by which products may be obtained that will accord with the descriptions and tests given for their identification.

In the previous edition of the British Pharmacopœia chemical symbols were introduced for expressing the composition of bodies of definite chemical constitution. By this method of notation, as generally adopted by chemists, not only is the elementary composition of bodies represented, but also their constitution; chemical *formulæ* being so constructed as to indicate the supposed distribution or arrangement, as well as the proportions of the respective elements. On this point, however, differences of opinion often exist, and the prevailing doctrines are subject to change with the progress of investigation and the extension of knowledge. In relation also to the numbers corresponding to the symbols of the elementary bodies, chemists are not agreed, and there are, in fact, at present, two tables of equivalents, one of which has been long in use, and the other more recently introduced. Important changes in these respects are now occurring, and the symbolic notation of the British Pharmacopœia of 1864, although still recognised in several of the schools and various elementary works on chemistry, has ceased to be used by some of the most eminent chemists in this country. It was represented to the Council, on high chemical authority, that, under such circumstances, symbolic *formulæ* might with advantage be omitted from the Pharmacopœia, and other means adopted for defining what is known of the composition of the substances referred to. The Council, however, did not think it expedient to relinquish the use of such *formulæ*, or to pronounce, directly or by implication, an opinion upon the comparative merits of the two systems referred to, but determined to represent chemical substances of definite chemical constitution both by the old and also by the new method of notation. In all cases, therefore, where chemical symbols are used, two *formulæ* are given, one according to the old, and the other according to the new system These are distinguished from each other by the use of different types, the *formulæ* according to the old system being printed in the lighter Roman type (Al), and those according to the new system in the heavier Egyptian type (**Al**).

In the use of names to designate medicines, the Council have endeavoured to adopt such as, with a due regard to conciseness, are most explicit and most likely to be understood, while at the same time they do not unnecessarily involve scientific theories that are liable to change, and are not likely, when employed in prescriptions, to excite the prejudices or the fears of those for whom the medicines may be ordered. Some names have been altered in accordance with these principles, but changes of name have in no case been introduced unless there appeared to be strong grounds for them.

No alteration has been made in the weights and measures which in the edition of 1864 were directed to be used in the preparation of medicines. The grain weight, established by law in this country, is well known and well defined. It has been in use from a very remote period, and forms a convenient unit for estimating the weight of many medicines. The avoirdupois ounce and pound, being the weights practically used in the sale of medicines and generally in commercial transactions, were adopted in the edition of 1864, and are still retained in preference to troy weights of the same denominations. It must be admitted that the absence in the present system of any denomination of weight between the grain and the avoirdupois ounce of 437·5 grains, and the fact that the ounce is not a simple multiple of the grain, are grave defects; still it has not been thought desirable to make any change in this respect at present, especially as no practical inconvenience appears to be experienced *in preparing* by means of these weights the medicines ordered in the Pharmacopœia. It is strongly urged upon all medical men to avoid the use of the terms ounce and pound with reference to any other than the avoirdupois or Imperial Standard weight; but it will be optional with the physician *in prescribing* to use the symbols ℈ and ʒ, the former representing 20 and the latter 60 grains, if such should be found to conduce to accuracy or convenience. In the measurement of liquids the Imperial measure is used for the higher denominations, and the fluid-ounce and its subdivisions into fluid drachms and minims for the lower denominations of volume. These measures are convenient, and have become familiar, having been used throughout the United Kingdom for many years.

The Council are not insensible to the advantages that would result from the adoption of one uniform system of weights and measures, to be used alike for all substances and in all countries, and they observe with satisfaction the efforts which have been made for the realisation of this object; but considering the paramount importance of avoiding errors in preparing and dispensing medicines, they cannot recommend that, in such operations, a system should be adopted which has been as yet but little used, and is to a great extent unknown, in this country; and on this account they have not employed the metrical system, even as an alternative, excepting in the processes for volumetric estimations, which are now so arranged that the same solutions may be made and used either with British weights and measures or with those of the metrical system. To facilitate the latter mode of using them, a table is appended to the description of each volumetric solution, in which the quantities to be used are represented in grammes and cubic centimetres, as well as in grains and grain-measures. The tables for showing the relations existing between the British and the metrical weights and measures have been made more full and comprehensive than they were in the previous edition.

Temperature in all cases, excepting where otherwise stated, is to be determined by Fahrenheit's thermometer, and specific gravities are to be taken at the temperature of 60°.

When a *water-bath* is directed to be used, it is to be understood that this term refers to an apparatus by means of which water or its vapour, at a temperature not exceeding 212°, is applied to the outer surface of a vessel containing the substance to be heated, which substance may thus be subjected to a heat near to, but necessarily below, that of 212°. In the *steam-bath* the vapour of water at a temperature above 212°, but not exceeding 230°, is similiarly applied.

The Council think it right to add that the present edition of the Pharmacopœia has been prepared by Professor Redwood, of the Pharmaceutical Society, and Mr. Warington, of Apothecaries' Hall, under the direction of a Committee of the Council, consisting of the following Members:—Dr. Burrows, Dr. Apjohn, Dr. Christison, Dr. Sharpey, and Dr. Quain, who also acted as Honorary Secretary.

April 1867.

$$x^\circ C = \frac{(a^\circ F - 32)5}{9}$$

$$x^\circ F = \frac{a^\circ C \times 9}{5} + 32$$

$$x^\circ R = \frac{(a^\circ F - 32)4}{9}$$

$$x^\circ R = \frac{a^\circ C \times 4}{9}$$

$$x^\circ F = \frac{a^\circ R \times 9}{4} + 32.$$

$$x^\circ C = \frac{a^\circ R \times 5}{4}$$

ARTICLES AND PREPARATIONS INCLUDED IN THE BRITISH PHARMACOPŒIA OF 1885, WHICH WERE NOT IN THAT OF 1867 NOR IN THE 'ADDITIONS' OF 1874.

Acidum Boricum
Acidum Carbolicum Liquefactum
Acidum Chromicum
Acidum Hydrobromicum Dilutum
Acidum Lacticum
Acidum Lacticum Dilutum
Acidum Meconicum
Acidum Oleicum
Acidum Phosphoricum Concent.
Acidum Salicylicum
Alcohol Ethylicum
Aloin
Apomorphinæ Hydrochloras
Aqua Anisi
Argenti et Potassii Nitras
Arsenii Iodidum
Bismuthi Citras
Bismuthi et Ammonii Citras
Butyl-Chloral Hydras
Caffeina
Caffeinæ Citras
Calamina Præparata
Calcii Sulphas
Calx Sulphurata
Chrysarobinum
Cimicifugæ Rhizoma
Cinchonidinæ Sulphas
Cinchoninæ Sulphas
Coca
Cocainæ Hydrochloras
Codeina
Collodium Vesicans
Cupri Nitras
Elaterinum
Ergotinum
ExtractumBelladonnæAlcoholicum
Extractum Cascaræ Sagradæ
Extractum Cascaræ Sagradæ Liquidum
Extractum Cimicifugæ Liquidum
Extractum Cocæ Liquidum
Extractum Gelsemii Alcoholicum
Extractum Jaborandi
Extractum Rhamni Frangulæ
Extractum Rhamni Frangulæ Liquidum
Extractum Taraxaci Liquidum
Gelsemium
Glycerinum Aluminis
Glycerinum Plumbi Subacetatis
Glycerinum Tragacanthæ
Infusum Jaborandi
Injectio Apomorphinæ Hypodermica
Injectio Ergotini Hypodermica
Iodoformum
Jaborandi
Lamellæ Atropinæ
Lamellæ Cocainæ
Lamellæ Physostigminæ
Liquor Acidi Chromici
Liquor Ammonii Acetatis Fortior
Liquor Ammonii Citratis Fortior
Liquor Arsenii et Hydrargyri Iodidi
Liquor Calcii Chloridi
Liquor Ferri Acetatis
Liquor Ferri Acetatis Fortior
Liquor Ferri Dialysatus

Liquor Morphinæ Bimeconatis
Liquor Sodii Ethylatis
Lupulinum
Menthol
Morphinæ Sulphas
Oleatum Hydrargyri
Oleatum Zinci
Oleo-Resina Cubebæ
Oleum Eucalypti
Oleum Pini Sylvestris
Oleum Santali
Paraffinum Durum
Paraffinum Molle
Physostigmina
Pilocarpinæ Nitras
Potassii Cyanidum
Quininæ Hydrochloras
Rhamni Frangulæ Cortex
Rhamni Purshiani Cortex
Salicinum
Sodii Bromidum
Sodii Iodidum
Sodii Salicylas
Sodii Sulphis
Sodii Sulphocarbolas
Sodium
Spiritus Ætheris Compositus
Spiritus Cinnamomi
Staphisagriæ Semina
Suppositoria Iodoformi
Tabellæ Nitroglycerini
Thymol
Tinctura Chloroformi et Morphinæ
Tinctura Cimicifugæ
Tinctura Gelsemii
Tinctura Jaborandi
Tinctura Podophylli
Trochisci Acidi Benzoici
Trochisci Santonini
Unguentum Acidi Borici
Unguentum Acidi Carbolici
Unguentum Acidi Salicylici
Unguentum Calaminæ
Unguentum Chrysarobini
Unguentum Eucalypti
Unguentum Hydrargyri Nitratis Dilutum
Unguentum Iodoformi
Unguentum Staphisagriæ
Unguentum Zinci Oleati
Vapor Olei Pini Sylvestris
Zinci Sulphocarbolas

ARTICLES AND PREPARATIONS INCLUDED IN THE BRITISH PHARMACOPŒIA OF 1867 OR IN THE 'ADDITIONS' OF 1874, BUT OMITTED IN THE BRITISH PHARMACOPŒIA OF 1885.

Areca
Cadmii Iodidum
Castoreum
Decoctum Ulmi
Digitalinum
Dulcamara
Enema Tabaci
Ferri Iodidum
Ferri Oxidum Magneticum
Ferri Peroxidum Humidum
Hydrargyri Iodidum Viride
Infusum Dulcamaræ
Liquor Atropiæ
Mistura Gentianæ
Pilula Quiniæ
Rhamni Succus
Sodæ Acetas
Stramonii Folia
Syrupus Rhamni
Tinctura Castorei
Ulmi Cortex
Unguentum Cadmii Iodidi

ARTICLES AND PREPARATIONS THE NAMES OF WHICH HAVE BEEN ALTERED.

Former Names, 1867 or 1874.	Present Names, 1885.
Aconitia	Aconitina
Albumen Ovi	Ovi Albumen
Ammoniæ Benzoas	Ammonii Benzoas
Ammoniæ Carbonas	Ammonii Carbonas
Ammoniæ Nitras	Ammonii Nitras
Ammoniæ Phosphas	Ammonii Phosphas
Arnicæ Radix	Arnicæ Rhizoma
Assafœtida	Asafœtida
Atropia	Atropina
Atropiæ Sulphas	Atropinæ Sulphas
Beberiæ Sulphas	Beberinæ Sulphas
Calcis Carbonas Præcipitata	Calcii Carbonas Præcipitata
Calcis Hydras	Calcii Hydras
Calcis Hypophosphis	Calcii Hypophosphis
Calcis Phosphas	Calcii Phosphas
Calx Chlorata	Calx Chlorinata
Canellæ Albæ Cortex	Canellæ Cortex
Cardamomum	Cardamomi Semina
Cataplasma Sodæ Chloratæ	Cataplasma Sodæ Chlorinatæ
Catechu Pallidum	Catechu
Cinchonæ Flavæ Cortex	Cinchonæ Cortex
Cinchonæ Pallidæ Cortex	Cinchonæ Cortex
Decoctum Cinchonæ Flavæ	Decoctum Cinchonæ [Rubræ]
Ecbalii Fructus	Ecballii Fructus
Emplastrum Cerati Saponis	Emplastrum Saponis Fuscum
Enema Assafœtidæ	Enema Asafœtidæ
Enema Magnesiæ Sulphatis	Enema Magnesii Sulphatis
Extractum Cinchonæ Flavæ Liq.	Extractum Cinchonæ [Rubræ] Liq.
Ferri et Ammoniæ Citras	Ferri et Ammonii Citras
Ferri et Quiniæ Citras	Ferri et Quininæ Citras
Hydrargyri Sulphas	Hydrargyri Persulphas
Infusum Cinchonæ Flavæ	Infusum Cinchonæ [Rubræ] Acidum
Liquor Ammoniæ Acetatis	Liquor Ammonii Acetatis
Liquor Ammoniæ Citratis	Liquor Ammonii Citratis
Liquor Atropiæ Sulphatis	Liquor Atropinæ Sulphatis
Liquor Bismuthi et Ammoniæ Citratis	Liquor Bismuthi et Ammonii Citratis
Liquor Calcis Chloratæ	Liquor Calcis Chlorinatæ
Liquor Magnesiæ Carbonatis	Liquor Magnesii Carbonatis

Former Names, 1867 or 1874.	Present Names, 1885.
Liquor Magnesiæ Citratis	Liquor Magnesii Citratis
Liquor Morphiæ Acetatis	Liquor Morphinæ Acetatis
Liquor Morphiæ Hydrochloratis	Liquor Morphinæ Hydrochloratis
Liquor Potassæ Permanganatis	Liquor Potassii Permanganatis
Liquor Sodæ Arseniatis	Liquor Sodii Arseniatis
Liquor Sodæ Chloratæ	Liquor Sodæ Chlorinatæ
Liquor Strychniæ	Liquor Strychninæ Hydrochloratis
Lithiæ Carbonas	Lithii Carbonas
Lithiæ Citras	Lithii Citras
Magnesia	Magnesia Ponderosa
Magnesiæ Carbonas	Magnesii Carbonas Ponderosa
Magnesiæ Carbonas Levis	Magnesii Carbonas Levis
Magnesiæ Sulphas	Magnesii Sulphas
Morphiæ Acetas	Morphinæ Acetas
Morphiæ Hydrochloras	Morphinæ Hydrochloras
Physostigmatis Faba	Physostigmatis Semen
Pilula Aloes et Assafœtidæ	Pilula Aloes et Asafœtidæ
Pilula Assafœtidæ Composita	Pilula Asafœtidæ Composita
Podophylli Radix	Podophylli Rhizoma
Potassæ Acetas	Potassii Acetas
Potassæ Bicarbonas	Potassii Bicarbonas
Potassæ Bichromas	Potassii Bichromas
Potassæ Carbonas	Potassii Carbonas
Potassæ Chloras	Potassii Chloras
Potassæ Citras	Potassii Citras
Potassæ Nitras	Potassii Nitras
Potassæ Permanganas	Potassii Permanganas
Potassæ Prussias Flava	Potassii Ferrocyanidum
Potassæ Sulphas	Potassii Sulphas
Potassæ Tartras	Potassii Tartras
Potassæ Tartras Acida	Potassii Tartras Acida
Quiniæ Sulphas	Quininæ Sulphas
Serpentariæ Radix	Serpentariæ Rhizoma
Sodæ Arsenias	Sodii Arsenias
Sodæ Bicarbonas	Sodii Bicarbonas
Sodæ Carbonas	Sodii Carbonas
Sodæ Carbonas Exsiccata	Sodii Carbonas Exsiccata
Sodæ Citro-tartras Effervescens	Sodii Citro-tartras Effervescens
Sodæ Hypophosphis	Sodii Hypophosphis
Sodæ Nitras	Sodii Nitras
Sodæ Phosphas	Sodii Phosphas
Sodæ Sulphas	Sodii Sulphas
Sodæ Valerianas	Sodii Valerianas
Solution of Gelatine	Solution of Isinglass
Strychnia	Strychnina
Suppositoria Morphiæ	Suppositoria Morphinæ

Former Names, 1867 or 1874.	Present Names, 1885.
Suppositoria Morphiæ cum Sapone	Suppositoria Morphinæ cum Sapone
Tinctura Assafœtidæ	Tinctura Asafœtidæ
Tinctura Cinchonæ Flavæ	Tinctura Cinchonæ [Rubræ]
Tinctura Quiniæ	Tinctura Quininæ
Tinctura Quiniæ Ammoniata	Tinctura Quininæ Ammoniata
Trochisci Morphiæ	Trochisci Morphinæ
Trochisci Morphiæ et Ipecacuanhæ	Trochisci Morphinæ et Ipecacuanhæ
Trochisci Potassæ Chloratis	Trochisci Potassii Chloratis
Trochisci Sodæ Bicarbonatis	Trochisci Sodii Bicarbonatis
Unguentum Aconitiæ	Unguentum Aconitinæ
Unguentum Atropiæ	Unguentum Atropinæ
Unguentum Veratriæ	Unguentum Veratrinæ
Valerianæ Radix	Valerianæ Rhizoma
Vapor Coniæ	Vapor Coninæ
Veratri Viridis Radix	Veratri Viridis Rhizoma
Veratria	Veratrina
Vinum Quiniæ	Vinum Quininæ

SUBSTITUTIONS.

Antimonium Nigrum Purificatum	*for*	Antimonium Nigrum
Cinchonæ Rubræ Cortex (in preparations)	"	Cinchonæ Flavæ Cortex Cinchonæ Pallidæ Cortex
Pulvis Elaterini Compositus	"	Pulvis Elaterii Compositus
Unguentum Glycerini Plumbi Subacetatis	"	Unguentum Plumbi Subacetatis Compositum

PREPARATIONS THE COMPOSITION OF WHICH HAS BEEN ALTERED.

(*Minor alterations are not included.*)

Acidum Sulphurosum
Alumen
Antimonium Sulphuratum
Extractum Cinchonæ Liquidum
Infusum Cinchonæ Acidum
Injectio Morphinæ Hypodermica
Liquor Epispasticus
Liquor Iodi
Oleum Phosphoratum
Pilula Phosphori
Pulvis Glycyrrhizæ Compositus
Tinctura Quininæ
Unguentum Hydrargyri Ammoniati
The fatty basis of the four suppositories of B.P. 1867 is now oil of theobroma only
In some of the ointments paraffins have been substituted for lard
Scammony Resin has been substituted for Scammony in most preparations of Scammony

ALTERATIONS (*continued*).

The strengths of the following preparations have been altered from 1 *in* 109 *to about* 1 *in* 100.

Liquor Arsenicalis
Liquor Arsenici Hydrochloricus
Liquor Atropinæ Sulphatis
Liquor Morphinæ Acetatis
Liquor Morphinæ Hydrochloratis
Liquor Potassii Permanganatis
Liquor Sodii Arseniatis
Liquor Strychninæ Hydrochloratis

CONTENTS.

PAGE

LIST OF THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION OF THE UNITED KINGDOM, 1885 v

PREFACE TO THE BRITISH PHARMACOPŒIA, 1885 ix

PREFACE TO THE BRITISH PHARMACOPŒIA, 1867 xiii

LIST OF ARTICLES INCLUDED IN THE PRESENT EDITION OF THE BRITISH PHARMACOPŒIA, BUT NOT IN THE PHARMACOPŒIA OF 1867 NOR IN THE 'ADDITIONS' OF 1874 xxiii

LIST OF ARTICLES INCLUDED IN THE BRITISH PHARMACOPŒIA OF 1867, BUT OMITTED IN THIS EDITION xxiv

LIST OF ARTICLES THE NAMES OF WHICH HAVE BEEN ALTERED . xxv

LIST OF PREPARATIONS THE COMPOSITION OF WHICH HAS BEEN ALTERED xxvii

THE PHARMACOPŒIA 1

THE APPENDIX 475

ARTICLES EMPLOYED IN CHEMICAL TESTING 475

TEST SOLUTIONS 479

TEST SOLUTIONS FOR VOLUMETRIC ESTIMATIONS 487

PAGE

Symbols and Atomic Weights of the Elementary Bodies mentioned in the British Pharmacopœia 497

Weights and Measures of the British Pharmacopœia . . 498

Relation of Measures to Weights 498

Weights and Measures of the Metric System 499

Relation of British to Metric Weights and Measures . . 499

Relation of Metric to British Weights and Measures . . 500

List of Books referred to, containing Plates of Official Plants 501

Index 505

Distinction between a fatty + an aromatic acid.
A fatty acid distils undecomposed e.g. Acetic Acid
An aromatic acid decomposes liberating C_6H_6 or a derivative
eg Benzoic acid.

THE

BRITISH PHARMACOPŒIA.

N.O. Leguminosæ

ACACIÆ GUMMI.

Gum Acacia. Exudes spontaneously

A gummy exudation from the stem and branches of Acacia Senegal, *Willd.* (A. Verek, *Guill. et Perr.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 94; and from other species of Acacia, *Willd.* Kordofan Arabia Nubia Egypt Abyssinia

Finest from upper district of White Nile

Characters and Tests.—In roundish, ovoid, or vermicular tears, or masses, of various sizes; or in angular fragments with glistening surfaces; colourless, or with a yellowish, brownish, or reddish tint. The tears either opaque from numerous minute fissures and very brittle, or more or less transparent and not readily broken; the fractured surfaces vitreous in appearance. Taste bland and mucilaginous; without odour; insoluble in alcohol, but entirely soluble in water, and forming a clear mucilaginous solution. The aqueous solution forms with subacetate of lead an opaque white jelly. If an aqueous solution of iodine be added to the powder, or to a solution formed with boiling water and cooled, there is no appearance of a violet or blue colour.

Acid to test-paper

Preparations containing Gum Acacia.

Mistura Cretæ	1	part in	34
,, Guaiaci	1	,,	85
Mucilago Acaciæ	1	,,	2½
Pulvis Amygdalæ Compositus	1	,,	13
,, Tragacanthæ Compositus	1	,,	6
Trochisci, in all.			

P.C. 15% H_2O, compound of Ca + Gummic or Arabic Acid containing also little K, Mg, H_3PO_4 yields on incineration 1.8 to 4% of ash chiefly $CaCO_3$

Genuine malt vinegar is distinguished from the spurious concoction of burnt sugar, $HC_2H_3O_2$ & H_2O by leaving on evaporation a thick, sweet residue which is largely composed of dextrin.

ACETUM.

Vinegar.

H_2SO_3 & Co. salts are often present. A vinegar containing these substances would be very poor for pickling purposes as they wld harden the vegetable tissues

An acid liquid, prepared from a mixture of malted and unmalted grain by the acetous fermentation.

Characters and Tests.—A liquid of a brown colour and peculiar odour. Specific gravity 1·017 to 1·019. 445·4 grains by weight (1 fluid ounce) of it require about 402 grain-measures of the volumetric solution of soda for their neutralisation, corresponding to 5·41 per cent. of real acetic acid, $HC_2H_3O_2$. If ten minims of solution of chloride of barium be added to a fluid ounce of the vinegar, and the precipitate, if any, be separated by filtration, a further addition of the test should give no precipitate. Sulphuretted hydrogen causes no change of colour. Excise authorities allow H_2SO_4 to be added to the extent of 1 part in 1000.

HNO_3 can be detected by adding indigo sulphate & warming: if HNO_3 is present colour is discharged.

Dose.—1 fluid drachm to 1 fluid ounce.

Preparation in which Vinegar is used.

Emplastrum Saponis Fuscum.

Bruised Cantharides are used because the powder wld. block the percolator. Glacial acetic acid is used to strengthen the acetic solvent & to make up for a certain amount inevitably lost in heating. The heat aids the solution of Cantharidin the active principle. A higher temp. than 200°F wld expel a lot of $HC_2H_3O_2$

ACETUM CANTHARIDIS.

Vinegar of Cantharides.

Take of

Cantharides, bruised	2 ounces	or	1 part
Glacial Acetic Acid	2 fluid ounces	,,	1 fluid part
Acetic Acid, sufficient for	20 fluid ounces	,,	10 fluid parts

Mix thirteen fluid ounces of the acetic acid with the glacial acetic acid, and digest the cantharides in this mixture for two hours at a temperature of 200° F. (93°·3 C.); then transfer the ingredients, after they have cooled, to a percolator, and when the liquid ceases to pass pour five fluid ounces of acetic acid over the residuum in the apparatus. As soon as the percolation is complete, subject the contents of the percolator

A vinegar or acetum in the P.B. sense is a solution of the soluble portions of a drug + acetic acid.

to pressure, filter the product, mix the liquids, and add sufficient acetic acid to make one pint. Specific gravity about 1·060.

ACETUM SCILLÆ.

Vinegar of Squill.

Strain with expression = gentle pressure of the hands. If it were strongly squeezed a lot of mucilaginous matter wld. be expelled & make the preparation muddy & it wld inevitably deposit.

Take of

Squill, bruised . .	$2\frac{1}{2}$ ounces . .	or . . 1 part
Diluted Acetic Acid .	1 pint	,, . . 8 fluid parts

Macerate the squill in the acetic acid for seven days, then strain with expression, and filter, Specific gravity about 1·038.

The resultant volume (& of necessity the S.G.) varies according to the humidity of the squill used.

Dose.—15 to 40 minims.

Preparations in which Vinegar of Squill is used.

Oxymel Scillæ | Syrupus Scillæ

ACIDUM ACETICUM.

Acetic Acid.

An acid liquid obtained from wood by destructive distillation and subsequently purified. 100 parts by weight contain 33 parts of real acetic acid, $HC_2H_3O_2$.

Characters and Tests.—A colourless liquid having a strong acid reaction and a pungent odour. Specific gravity 1·044. 182 grains by weight require for neutralisation 1000 grain-measures of the volumetric solution of soda. It leaves no residue when evaporated, and gives no precipitate with sulphuretted hydrogen, chloride of barium, or nitrate of silver. If a fluid drachm of it mixed with half an ounce of distilled water and half a drachm of pure hydrochloric acid be put into a small flask with a few pieces of granulated zinc, and while the effervescence continues a slip of bibulous paper moistened with solution of subacetate of lead be suspended in the upper part of the flask above the liquid for about five minutes, the paper will not become discoloured.

Absence of H_2SO_3 caused by reduction of H_2SO_4 by tarry matter in the process of distillation.

An acid is a salt of H.

Distillation is the operation of separating a more volatile substance from a less volatile with the object of obtaining the former. If the product is a solid the operation is termed sublimation

Preparations containing free Acetic Acid.

Acetum	5·41 per cent. of real acetic acid
,, Cantharidis .	
,, Scillæ	
Acidum Aceticum Glaciale .	98·8 per cent. of real acetic acid
,, Aceticum . .	33·0 per cent. do.
,, ,, Dilutum .	4·27 per cent. do.
Extractum Colchici Aceticum	
Linimentum Terebinthinæ Aceticum	
Mistura Creasoti	
Oxymel	
,, Scillæ	
Syrupus Scillæ	
Tinctura Ferri Acetatis	

Official Acetates.

Æther Aceticus
Ammonii Acetatis, Liquor
,, ,, Liquor Fortior
Ferri Acetatis, Liquor
,, ,, Liquor Fortior
,, ,, Tinctura
Morphinæ Acetas
,, Acetatis, Liquor
Plumbi Acetas
,, Subacetatis, Liquor
,, ,, Liquor Dilutus
Potassii Acetas
Zinci Acetas

ACIDUM ACETICUM DILUTUM.

Diluted Acetic Acid.

Take of

Acetic Acid . .	1 pint . . or . .	1 fluid part
Distilled Water .	7 pints . . ,, . .	7 fluid parts

Mix.

Tests.—Specific gravity 1·006. 440 grains by weight (1 fluid ounce) require for neutralisation 313 grain-measures of the volumetric solution of soda, corresponding to 4·27 per cent. of real acetic acid, $HC_2H_3O_2$. One fluid ounce therefore contains nearly 19 grains of real acetic acid.

Dose.—1 fluid drachm to 1 fluid ounce.

Preparations in which Diluted Acetic Acid is used.

Acetum Scillæ | Liquor Morphinæ Acetatis

ACIDUM ACETICUM GLACIALE.

Glacial Acetic Acid.

prepared by refrigeration

Concentrated acetic acid, containing nearly 99 per cent. of real acid, $HC_2H_3O_2$.

Characters and Tests.—It crystallises when cooled, and remains crystalline until the temperature rises to above 60° F. (15°·5 C.) Specific gravity 1·058, and this is increased by adding ten per cent. of water. At the mean temperature of the air it is a colourless liquid, with a pungent acetous odour. 60 grains by weight mixed with a fluid ounce of distilled water require for neutralisation at least 990 grain-measures of the volumetric solution of soda. If a fluid drachm of it mixed with half an ounce of distilled water and half a drachm of pure hydrochloric acid be put into a small flask with a few pieces of granulated zinc, and while the effervescence continues a slip of bibulous paper moistened with solution of subacetate of lead be suspended in the upper part of the flask above the liquid for about five minutes, the paper will not become discoloured.

Due to formation of a hydrate of acetic acid

Is a solvent for gum resins; Vol: oils; Camphor.

Preparations in which Glacial Acetic Acid is used.

Acetum Cantharidis | Mistura Creasoti
Linimentum Terebinthinæ Aceticum

ACIDUM ARSENIOSUM.

"Schedule No I Poisons act"

Arsenious Acid.

Synonyms.—Arsenic; Arsenicum Album; White Arsenic; Anhydrous Arsenious Acid; Arsenious Anhydride.

As_2O_3.

An anhydride (not a true acid) obtained by roasting arsenical ores, and purified by sublimation.

$2FeAs_2 \cdot FeS_2 + 3O_2 = As_4O_6 + 4Fe$

anhydride is a chemical compound which on the addition of
o forms an acid.

$S_2 + As_2O_3$

Characters and Tests.—Occurs as a heavy white powder, or in sublimed masses which usually present a stratified appearance caused by the existence of separate layers differing from each other in degrees of opacity. When slowly sublimed in a glass tube it forms minute brilliant and transparent crystals of octahedral character. It is sparingly soluble in cold water, more soluble in boiling water, and its solution, which is odourless and tasteless, gives with ammonio-nitrate of silver a canary-yellow precipitate insoluble in water but readily dissolved by ammonia and by nitric acid. Sprinkled on a red-hot coal, it emits an alliaceous odour. It is entirely volatilised at a temperature not exceeding 400° F. (204°·4 C.) Four grains of it dissolved in boiling water with about twenty grains of bicarbonate of sodium, discharge the colour of 808 grain-measures of the volumetric solution of iodine.

(Argentic arsenite)

$6AgNO_3 + 6NH_4OH + As_2O_3 = 2Ag_3AsO_3 + 3H_2O + 6NH_4NO_3$

Prunis impositum arsenicum odorem alliaceum spargit.

Dose.—$\frac{1}{60}$ to $\frac{1}{12}$ grain. Nerve tonic. Long used in vrings on oedema of the eyelids.

Preparations in which Arsenious Anhydride is used.

Liquor Arsenicalis . . . about 1 grain in 100 fl. grains
,, Arsenici Hydrochloricus about 1 grain in 100 fl. grains

Official Arseniates.

Ferri Arsenias | Sodii Arsenias
Sodii Arseniatis, Liquor

ACIDUM BENZOICUM.

In pills used 1 dr. Glycerine to 5 grs of Acid. Benz.

Benzoic Acid.

$HC_7H_5O_2$.

An acid obtained from benzoin, and prepared by sublimation. Not chemically pure.

Characters and Tests.—In light feathery crystalline plates and needles, which are flexible, nearly colourless, and have an agreeable aromatic odour, resembling that of benzoin. It is sparingly soluble in water, but readily in rectified spirit; soluble also in solutions of the alkalies and of lime, forming benzoates, and it is precipitated from these on the addition of hydrochloric acid unless the solution be very dilute. It melts

The benzoin is mixed with its own weight of pumice stone or sand + sublimed & cond in a chamber

Wet Method:- powdered benzoin is mixed with $Ca(OH)_2 + H_2O$ + boiled for some time + filtered, residue washed with boiling H_2O; concd.: precipitated with conc. HCl. filtered. R. ~~dissolved~~ in boiling H_2O agitated with C. filtered carefully evaporated. Dried with Bibulous paper dissolved in a little ether + crystallized. Prepared on a large scale from coal tar products; napthalin + also from Hippuric acid (Found in ~~urine~~ urine of all herbivorous Mammalia.)

Heated with CaO $C_6H_5COOH + CaO = C_6H_6 + CaCO_3$
benzene

at 248° F. (120° C.), and boils at 462° F. (238°·9 C.) When heated to the last-named temperature, it passes off in vapour, leaving only a slight residue.

Dose.—10 to 15 grains.

Preparations.

Tinctura Camphoræ Composita .	2 grains in 1 fluid ounce
,, Opii Ammoniata . .	9 grains in 1 fluid ounce
Trochisci Acidi Benzoici . .	½ grain in each lozenge

Official Benzoate.—Ammonii Benzoas.

ACIDUM BORICUM.

Boric Acid.

Synonym.—Boracic Acid.

H_3BO_3.

HCl is used instead of H_2SO_4 on account of the difficulty of separating the Na_2SO_4

A weak acid obtained by the action of sulphuric acid on borax, and by the purification of native boric acid.

$Na_2B_4O_7 \cdot 10H_2O + H_2SO_4 = 4H_3BO_3 + Na_2SO_4 + 5H_2O$

Characters and Tests.—Colourless, pearly, lamellar crystals or irregular masses of crystals; easily powdered; unctuous to the touch; taste feebly sour and bitter and leaving a sweetish after-flavour in the mouth. Soluble in 25 parts of water, 5 of glycerine, 16 of rectified spirit at 60° F. (15°·5 C.), and in 3 of boiling water. It changes the colour of litmus to wine-red; turmeric paper moistened with an aqueous solution slightly acidified with hydrochloric acid, becomes brownish red on gently drying, and this colour changes to a greenish if solution of potash be added. The alcoholic solution burns with a flame tinged with green. The crystals liquefy when warmed, and on careful ignition lose 43½ per cent. of their weight, the product solidifying, on cooling, to HBO_2 a brittle glass-like mass. The aqueous solution should not yield more than a faint opalescence with chloride of barium, nitrate of silver, or oxalate of ammonium; nor afford any precipitate with sulphydrate of ammonium; nor give a strong persistent yellow tinge to a spirit flame or air-gas flame.

Dose.—5 to 30 grains.

Preparation.—Unguentum Acidi Borici.

Gargle grs ii to ℥i
Spray grs iii to ℥i
Injection gr i to ℥i ...
(bladder or vagina)

Inhalation 20 grs to Oi boiling H_2O
Lotion 15-30 grs to ℥i

Has the property of combining with alkalies to form salts hence its name acid.

The hydrate of an aromatic hydrocarbon

ACIDUM CARBOLICUM.

Carbolic Acid.

Synonyms.—Phenic Acid; Phenol; Phenic Alcohol.

HC_6H_5O.

An acid obtained from coal-tar oil by fractional distillation and subsequent purification.

Characters and Tests.—In separate pulverulent crystals having a peculiar taste and odour, or in acicular crystalline masses; colourless, or having a very slight reddish or brownish tinge; boiling point not higher than 371° F. (188°·3 C.), and melting point not lower than 91°·5 F. (33° C.) Specific gravity at the melting point, 1·060 to 1·066. At 60° F. (15°·5 C.), 100 parts of the acid are liquefied by the addition of 5 to 10 parts of water; dissolve 30 to 40 of water, and are dissolved by 1,800 to 1,200 of water; the former and latter of these numbers being respectively characteristic of the acicular and pulverulent varieties of the acid. The aqueous solution should be clear and colourless, or nearly so; any insoluble brown matter separating as dark oily drops which should not have more than a faint tarry odour. Carbolic acid is freely soluble in alcohol, ether, benzol, chloroform, disulphide of carbon, glycerine, or glycerine and water, and in solutions of alkalies. It does not redden blue litmus paper. It coagulates albumen. It does not affect the plane of polarisation of a ray of polarised light. Neutral solution of perchloride of iron strikes a deep purple colour, and bromine water gives a white precipitate with a cold saturated aqueous solution of carbolic acid. Solution of ammonia and of chlorinated soda produce a deep purple coloration, especially after a time.

Absence of higher phenols

$C_6H_2Br_3OH$ This is THE test.

Dose.—1 to 3 grains.

Preparations.

Acidum Carbolicum Liquefactum .	about 90 per cent.
Glycerinum Acidi Carbolici . .	1 part in 6 by weight
Suppositoria Acidi Carbolici cum Sapone	about 1 in 20
Unguentum Acidi Carbolici	

Heated with Zn dust yields benzene:- $HC_6H_5O + Zn = C_6H_6 + ZnO$.

ACIDUM CARBOLICUM LIQUEFACTUM.

Liquefied Carbolic Acid.

Carbolic acid liquefied by the addition of 10 per cent. of water.

Characters and Tests.—A colourless or very slightly reddish or brownish liquid having the taste, odour, &c., of carbolic acid. Specific gravity 1·064 to 1·067 at 60° F. (15°·5 C.) Boiling point gradually rising to a temperature not higher than 371° F. (188°·3 C.) It dissolves 18 to 26 per cent. of water at 60° F. (15°·5 C.), yielding a clear or nearly clear solution, from which any slight coloured impurity contained previously in the acid separates as dark oily drops.

Dose.—1 to 4 minims.

ACIDUM CHROMICUM.

Chromic Acid.

One of the most powerful oxidising agents known

Synonyms.—Anhydrous Chromic Acid; Chromic Anhydride.

CrO_3.

An anhydride (not a true acid). It may be obtained by the following process:—

Take of

Bichromate of Potassium . .	30 ounces
Sulphuric Acid	57 fluid ounces
Distilled Water	a sufficiency

Dissolve the bichromate of potassium in a mixture of 50 fluid ounces of the water and 42 fluid ounces of the acid. Set aside for twelve hours, and decant the liquor from the crystals of acid sulphate of potassium that have separated. Heat the liquor to about 185° F. (85° C.), and add the remainder of the acid, and water sufficient to just redissolve any crystals of chromic acid that may have been formed. Allow to cool, collect and drain the crystals, and dry them on porous tiles at a

$K_2CrO_4 \cdot CrO_3 + H_2SO_4 = \,:CrO_3 + K_2SO_4 + H_2O$

Soluble in Aether without decomposition

$2CrO_3 + 12HCl = Cr_2Cl_6 + 6H_2O + 3Cl_2$

temperature not exceeding 100° F. (37°·8 C.) in an air bath. From the mother liquor more crystals may be obtained on evaporation.

Characters and Tests.—Crimson acicular crystals, very deliquescent, inodorous, corrosively caustic to the skin. At a high temperature it melts, and at a still higher temperature decomposes, with the evolution of oxygen gas, leaving a greenish-black residue. Warmed with hydrochloric acid, chlorine is evolved. Mixed with cold alcohol, aldehyd is evolved, and a green residue remains. It is soluble in water, yielding a deep orange-red solution. If placed in contact with alcohol, glycerine, and some other organic matters, sudden combustion or explosion may ensue. One or two grains dissolved in two or three ounces of water should afford only a faint opalescence with chloride of barium.

Preparation.

Liquor Acidi Chromici . . . . . 1 part in 4

ACIDUM CITRICUM.

Citric Acid.

$H_3C_6H_5O_7,H_2O$.

An acid prepared from lemon-juice, or from the juice of the fruit of Citrus Bergamia, *Risso and Poit.* (Citrus Limetta, *DC.*), the Lime. It may be obtained by the following process:—

Take of

Lemon Juice	4 pints
Prepared Chalk	4½ ounces
Sulphuric Acid	2½ fluid ounces
Distilled Water	a sufficiency

saturates [illegible] Heat the lemon juice to its boiling point and add the chalk by degrees till there is no more effervescence. Collect the deposit on a calico filter, and wash it with hot water till the filtered liquor passes from it colourless. Mix the deposit with a pint of distilled water, and gradually add the sulphuric acid

$2H_3C_6H_5O_7 + 3CaCO_3 = Ca_3(C_6H_5O_7)_2 + 3H_2O + 3CO_2$

$Ca_3(C_6H_5O_7)_2 + 3H_2SO_4 = 2H_3C_6H_5O_7 + 3CaSO_4$

previously diluted with a pint and a half of distilled water. Boil gently for half an hour, keeping the mixture constantly stirred. Separate the acid solution by filtration, wash the insoluble matter with a little distilled water, and add the washings to the solution. Concentrate this solution to the density of 1·21, then allow it to cool, and after twenty-four hours decant the liquor from the crystals of sulphate of calcium which will have formed; further concentrate the liquor until a film forms on its surface, and set it aside to cool and crystallise. Purify the crystals if necessary by recrystallisation.

Characters and Tests.—In colourless crystals, of which the right rhombic prism is the primary form; very soluble in water, less soluble in rectified spirit, and insoluble in pure ether. The crystals dissolve in three-fourths of their weight of cold, and in half their weight of boiling water. The diluted aqueous solution has an agreeable acid taste. When the solution is made by dissolving about forty grains of the acid in one ounce of water, it resembles lemon juice in strength and in the nature of its acid properties, and, like lemon juice, it undergoes decomposition and becomes mouldy by keeping. The aqueous solution is not darkened by sulphuretted hydrogen, gives no precipitate when added in excess to solution of acetate of potassium, or of chloride of barium, and if sparingly added to cold lime water it does not render it turbid. The crystals leave no ash when burned with free access of air. Seventy grains of the acid dissolved in distilled water are neutralised by 1000 grain-measures of the volumetric solution of soda.

ed
ic acid

If a little Pb. is added to the aq. sol. the test is more delicate. Pb is present when the liquor is evaporated in porcelain or other vessels containing lead.

Dose.—10 to 30 grains.

Heated to 175°C it is decomposed
$H_3C_6H_5O_7 + H_2O = H_3C_6H_3O_6 + 2H_2$
aconitic acid

Preparations containing free Citric Acid.

Succus Limonis | Syrupus Limonis
Vinum Quininæ

Official Citrates.

Ammonii Citratis, Liquores
Bismuthi Citras
,, et Ammonii Citras
,, ,, Am. Cit. Liq.
Caffeinæ Citras
Ferri Citratis, Vinum,
Syr. Ferri Subchlor

Ferri et Ammonii Citras
,, ,, Quininæ Citras
Lithii Citras
Magnesii Citratis, Liquor
Potassii Citras
Sodii Cit.-tart. Effervcs.

ACIDUM GALLICUM.

Gallic Acid.

$H_3C_7H_3O_5,H_2O$.

An acid prepared from galls. It may be obtained by the following process:—

Boil one part of coarsely powdered galls with four fluid parts of diluted sulphuric acid for half an hour, then strain through calico while hot; collect the crystals that are deposited on cooling, and purify these with animal charcoal and repeated crystallisation. The tannic acid of the galls is converted by hydrolysis into gallic acid. $C_{14}H_{10}O_9 + 3H_2O = 2C_7H_6O_5 \cdot H_2O$

For dispensing never use hot H_2O or hot infus. to dissolve the gallic acid

Characters and Tests.—Crystalline, in acicular prisms or silky needles, sometimes nearly white, but generally of a pale fawn colour. It requires about 100 parts of cold water for its solution, but dissolves in 3 parts of boiling water. Soluble also in rectified spirit. The aqueous solution gives no precipitate with solution of isinglass. It gives a bluish-black precipitate with a persalt of iron. The crystalline acid when dried at 212° F. (100° C.) loses 9·5 per cent. of its weight. It leaves no residue when burned with free access of air.

Absence of Tannic acid

Dose.—2 to 10 grains.

Preparation.

Glycerinum Acidi Gallici . 1 part in 6 by weight

ACIDUM HYDROBROMICUM DILUTUM.

Diluted Hydrobromic Acid.

An aqueous solution containing 10 per cent. by weight of gaseous or real hydrobromic acid, HBr. It may be obtained by the following process:—

Take of

Bromine	1 fluid ounce
Distilled Water . . .	of each a sufficiency
Sulphuretted Hydrogen . .	

Other methods :-

(1) $2SO_2 + 4H_2O + 2Br_2 = 4HBr + 2H_2SO_4$ (2) $BaBr_2 + H_2SO_4 = 2HBr + BaSO_4$

(3) ∴ Distil $Na_2S_2O_3 + 4Br_2 + 5H_2O = 8HBr + 2NaHSO_4$ (4) $PBr_5 + 4H_2O = 5HBr + H_3PO_4$

(5) $P_2 + 5Br_2 + 8H_2O = 10HBr + 2H_3PO_4$

KBr (alcoh: sol:) + $H_2C_4H_4O_6 = HBr + KHC_4H_4O_6$ (Impurity. Fothergill's process)

Cannot be prepared by action of H_2SO_4 acid on KBr as in distilling the heated H_2SO_4 is liable to split up the HBr. $H_2SO_4 + 2HBr = SO_2 + Br_2 + 2H_2O$ acid thus prepared becomes discolored.

when H_2S is passed into an aqeous solution of bromine HBr + H_2SO_4 are formed
being deposited :- $2H_2S + 4H_2O + 5Br_2 = 10HBr + H_2SO_4 + S$
he S reacts with the Br. forming S_2Br_2 which when boiled with the H_2O
roduces HBr & H_2SO_4 + deposits S. $3S_2Br_2 + 4H_2O = 6HBr + H_2SO_4 + 5S$.
is therefore a disadvantage to filter out the sediment as ordered in the Pharmacopœia.

t would be better to stop passing SH_2 just before the red colour disappears This ould ensure absence of S comps in the distillate & any free bromine would distil over in 1st few ounces & could be reserved for a subsequent distillation.

Place the bromine in a glass cylinder and pour over it 15 ounces of the water. Pass a current of sulphuretted hydrogen gas into the bromine until the red colour of the aqueous liquid has disappeared. Filter the fluid, and distil the filtrate. Reject the distillate until it is free from odour of sulphuretted compounds, and then collect it until sulphuric acid begins to distil. *Dilute the distilled acid with water until it has a specific gravity at 60° F. (15°·5 C.) of 1·077. Preserve in glass-stoppered bottles.

↗ White fumes are formed when H_2SO_4 begins to distil.

* The acid is improved by redistillation before dilution with a few grs of $BaCO_3$ in retort to retain traces of H_2SO_4

From the rejected distillate more hydrobromic acid may be obtained by redistillation. (A modification of Fletcher's process)

Characters and Tests.—A colourless, inodorous liquid, having a sour taste and acid reaction. Evaporated to dryness, it leaves little or no residue. Chlorine water liberates bromine, colouring the fluid yellow. With nitrate of silver it yields a white curdy precipitate insoluble in nitric acid, and only sparingly soluble in solution of ammonia; no precipitate with chloride of barium; and does not become discoloured < Traces of some acids on keeping. 810 grains by weight require for neutralisation 1000 grain-measures of the volumetric solution of soda.

Dose.—15 to 50 minims.

ACIDUM HYDROCHLORICUM.

Strongest aqueous sol contains 37% HCl. 22% is the "critical" "second" Above this the acid fumes in contact with moist air.

Hydrochloric Acid.

rg. am. of the commercial is produced in the nufacture of Na_2CO_3 from in the "Black ash" process.

Synonym.—Muriatic Acid.

Hydrochloric acid gas, HCl, dissolved in water, and forming about 32 per cent. by weight of the solution. It may be obtained by the following process:—

NaCl is ordered dried that a proper proportion may be used

Take of

Chloride of Sodium, dried	48 ounces
Sulphuric Acid	44 fluid ounces
Water	36 fluid ounces
Distilled Water	50 fluid ounces

Pour the sulphuric acid slowly into thirty-two ounces of the water, and when the mixture has cooled, add it to the

$NaCl + H_2SO_4 = NaHSO_4 + HCl$.

chloride of sodium previously introduced into a flask having the capacity of at least one gallon. Connect the flask by corks and a bent glass tube with a three-necked wash-bottle, furnished with a safety-tube, and containing the remaining four ounces of the water; then, applying heat to the flask, conduct the disengaged gas through the wash-bottle into a second bottle containing the distilled water, by means of a bent tube dipping about half an inch below the surface, and let the process be continued until the product measures sixty-six ounces, or the liquid has acquired a specific gravity of 1·16. The bottle containing the distilled water must be kept cool during the whole operation.

HCl gas is invisible but coming in contact with air forms white fumes due to combination with the atm. atmospheric moisture.

Characters and Tests.—A nearly colourless and strongly acid liquid, emitting white vapours having a pungent odour. Specific gravity 1·160. When evaporated to dryness, it leaves no residue. It gives with nitrate of silver a curdy white precipitate, soluble in excess of ammonia, insoluble in nitric acid. 114·8 grains by weight, mixed with half an ounce of distilled water, require for neutralisation 1000 grain-measures of the volumetric solution of soda. * When diluted with four times its volume of distilled water, it gives no precipitate with solution of chloride of barium or with sulphuretted hydrogen, and, even when boiling, it does not tarnish or alter the colour of bright copper foil. If a fluid drachm of it mixed with half an ounce of distilled water be put into a small flask with a few pieces of granulated zinc, and while the effervescence continues a slip of bibulous paper wetted with solution of subacetate of lead be suspended in the upper part of the flask above the liquid for about five minutes, the paper will not become discoloured. If a drop or two of dilute solution of sulphate of indigo be added to half an ounce of the acid, the latter should acquire a permanent blue tint.

* Diluted because $BaCl_2$ is insoluble in strong acids

Absence of As

Absence of H_2SO_3

Absence of HNO_3

Shld not dissolve gold leaf (absence of free Cl

Preparations containing free Hydrochloric Acid.

Acidum Hydrochloricum Dilutum
,, Nitro-hydrochloricum Dilutum
Liquor Antimonii Chloridi
,, Arsenici Hydrochloricus
,, Morphinæ Hydrochloratis
,, Strychninæ Hydrochloratis

Official Chlorides and Hydrochlorates.

Ammonii Chloridum
Antimonii Chloridi, Liquor
Apomorphinæ Hydrochloras
Arsenici, Liquor Hydrochloricus
Calcii Chloridum; et Liquor
Cocainæ Hydrochloras
Ferri Perchloridi, Liquores
" " Tinctura
Hydrargyri Perchloridum
" Perchloridi, Liq.
" Subchloridum
Hydrargyrum Ammoniatum
Morphinæ Hydrochlor. et Liq.
Quininæ Hydrochloras
Sodii Chloridum
Strychninæ Hydrochlor. Liq.
Zinci Chloridum; et Liquor

ACIDUM HYDROCHLORICUM DILUTUM.

Diluted Hydrochloric Acid.

Take of

Hydrochloric Acid	8 fluid ounces
Distilled Water	a sufficiency

Dilute the acid with sixteen ounces of the water, then add more water, so that at a temperature of 60° F. (15°·5 C.) it shall measure $26\frac{1}{2}$ fluid ounces.

Or as follows:

Take of

Hydrochloric Acid	3060 grains
Distilled Water	a sufficiency

Weigh the acid in a glass flask the capacity of which, to a mark on the neck, is one pint, then add distilled water until the mixture, at 60° F. (15°·5 C.), after it has been shaken, measures a pint.

Tests.—Specific gravity 1·052. 345 grains by weight (6 fluid drachms) require for neutralisation 1000 grain-measures of the volumetric solution of soda, corresponding to 10·58 per cent. of real acid. Six fluid drachms contain one molecular weight in grains (36·5) of hydrochloric acid, HCl.

Dose.—10 to 30 minims. $3\frac{1}{3}$ m = 1 m of strong acid.

Preparations for which Diluted Hydrochloric Acid is used.

Liquor Morphinæ Hydrochloratis
" Strychninæ "

Prussic acid so-called because Scheele (who 1st discovered it) prepared it from Prussian Blue
$Fe_4 3FeC_6N_6 + 9HgO = 9Hg(CN)_2 + 2Fe_2O_3 + 3FeO$:- Boil till blue colour disappears
Filter:- $Hg2NC + Fe + H_2SO_4 = 2HCN + FeSO_4 + Hg$ Mix shake + distil
Varies in strength usually from 4 to 5% when fresh.

Schedule No I Poisons act.

Not an acid – it is "Formonitryl."

ACIDUM HYDROCYANICUM DILUTUM.

Diluted Hydrocyanic Acid.

$H-C\equiv N$

Hydrocyanic acid, HCN, dissolved in water, and constituting 2 per cent. by weight of the solution.

Yields only 50% of its cyanide

Take of

Ferrocyanide of Potassium .	2¼ ounces
Sulphuric Acid	1 fluid ounce
Distilled Water	30 fluid ounces, or a sufficiency

In the cold hydroferrocyanic acid is produced when gives a green colour to the mixture.

Dissolve the ferrocyanide of potassium in ten ounces of the water, then add the sulphuric acid, previously diluted with four ounces of the water and cooled. Put the solution into a flask or other suitable apparatus of glass or earthenware, to which are attached a condenser and a receiver arranged for distillation; and having put eight ounces of distilled water into the receiver, and provided efficient means for keeping the condenser and receiver cold, apply heat to the flask, until by slow distillation the liquid in the receiver is increased to seventeen fluid ounces. Add to this three ounces of distilled water, or as much as may be sufficient to bring the acid to the required strength, so that one hundred grains (or 110 minims) of it, precipitated with a solution of nitrate of silver, and the precipitate thoroughly washed and dried, shall yield ten grains of dry cyanide of silver.

Diluted hydrocyanic acid should be kept in well-corked bottles, tied over with impervious tissue. The bottles should be inverted when not in use, and be kept in a dark place.

Characters and Tests.—A colourless liquid with a peculiar odour. Specific gravity 0·997. It only slightly and transiently reddens litmus paper. A fluid drachm of it evaporated in a platinum dish leaves no fixed residue. Treated with a minute quantity of a mixed solution of sulphate and persulphate of iron, afterwards with potash, and finally acidulated with hydrochloric acid, it forms Prussian blue. It gives no precipitate with chloride of barium, but with nitrate of silver it

$2K_4FeC_6N_6 + 6H_2SO_4 = 6HCN + FeK_2FeC_6N_6 + 6KHSO_4$

If conc H_2SO_4 is used

$K_4FeC_6N_6 + 6H_2SO_4 + 6H_2O = FeSO_4 + 2K_2SO_4 + 3(NH_4)_2SO_4 + 6CO$.

The mixture of H_2SO_4 + K_4FeCy_6 commences to boil at 187°F. At this temp. [illegible] [illegible] & produce HCN. The HCN is not formed till this temp. is reached. Pure HCN boils [illegible] [illegible] 77 + 78°F. Therefore at 187°F its vapour pressure is sufficiently great to overcome that of the atmosphere & the liquid boils. But very little H_2O passes over at this time hence the reason for passing gas into H_2O in the receiver

yields a white precipitate entirely (1) soluble in boiling concentrated nitric acid. (1) absence of HCl 270 grains of it, to which solution of litmus is added, the fluid being rendered alkaline by the addition of solution of soda and maintained faintly alkaline throughout the operation—which should be performed speedily so as to prevent loss of acid by volatilisation—require 1000 grain-measures of the volumetric solution of nitrate of silver to be added before a permanent precipitate begins to form, which corresponds to two per cent. of the real acid, HCN.

Dose.—2 to 8 minims. The brown deposit sometimes seen is formate of ammonium

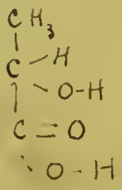
Preparations.

Vapor Acidi Hydrocyanici

Tinctura Chloroformi et Morphinæ . 1 volume in 16

ACIDUM LACTICUM.

Lactic Acid.



Lactic acid, $HC_3H_5O_3$, with about 25 per cent. of water. Produced by the action of a peculiar ferment on solution of sugar and subsequent purification of the product. Bacterium lactis. By prolonged action of the ferment on lactic acid, butyric acid is formed $2HC_3H_5O_3 = C_4H_8O_2 + 2CO_2 + 2H_2$

Characters and Tests.—A colourless syrupy liquid, inodorous, with a pure acid taste, and acid reaction on litmus. Specific gravity 1·21. Miscible in all proportions with water, rectified spirit, and ether, nearly insoluble in chloroform. Warmed with permanganate of potassium, it gives the odour of aldehyd. It vaporises when heated, and yields inflammable gases when the temperature is about 350° F. (176°·7 C.), at first burning with a blue flame which becomes more luminous as the temperature rises. When nearly all dissipated, the residue chars, and finally almost entirely disappears. A solution in about ten parts of water, neutralised by ammonia, is not precipitated by sulphydrate of ammonium. Not more than a faint opalescence is produced with chloride of barium, nitrate of silver, or oxalate of ammonium, nor when boiled with excess of Fehling's solution is any precipitate formed. absence of sugar.

[illegible] a quantity of sugar is boiled with tartaric acid. This converts it into grape sugar. $C_{12}H_{32}O_{11} + H_2O = 2C_6H_{12}O_6$ To this is added a quantity of rotten cheese with sour milk then chalk is added [illegible] stand at 30°C. [illegible] acid fermentation takes place the lactic acid combining with the $CaCO_3$ & forming lactate of calcium. $C_6H_{12}O_6 = 2HC_3H_5O_3 + 2CO_3$ $Ca\,2C_3H_5O_3 + H_2O + CO_2$ process takes about 3 or 4 wks. The mixture is then diluted with water & strained, & decomposed with dil H_2SO_4 [illegible] with ether. This takes up the lactic acid. Sol. of lactic acid removed & agitated & on recovering the ether the acid left. Lactic acid cannot be distilled.

120 grains require for neutralisation 1000 grain-measures of volumetric solution of soda.

Preparation.

Acidum Lacticum Dilutum . 15 fluid parts in 100

ACIDUM LACTICUM DILUTUM.

Diluted Lactic Acid.

Take of

Lactic Acid . . .	3 fluid ounces
Distilled Water . .	sufficient to produce 1 pint

Mix.

Is 9% real $HC_3H_5O_3$ *Dose.*—½ to 2 fluid drachms.

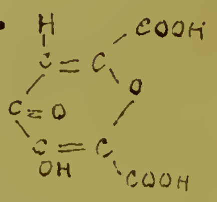
Tests.—Specific gravity 1·040. 700 grains by weight require for neutralisation 1000 grain-measures of volumetric solution of soda.

Meconic acid is a bye product in the preparation of morphine. The ppt. obtained with $CaCl_2$ is washed + treated with dil: H_2SO_4. The meconic acid is dissolved out by boiling H_2O + separates on cooling. Purify by recrystallization

ACIDUM MECONICUM.

Meconic Acid.

$H_2C_7H_2O_7,3H_2O$.



An acid obtained from opium.

In a decoction of opium is heated with a solution of $Pb\,2C_2H_3O_2$ which ppts meconate of lead + coloring matter. The ppt is diffused in H_2O + decomposed by a current of H_2S. On filtering + concentrating the meconic acid crystallizes out.

Characters and Tests.—In micaceous crystals, nearly colourless, sparingly soluble in water, readily soluble in alcohol. The solution in water has a strongly acid taste and reaction, and is coloured red by neutral solution of perchloride of iron, the colour being discharged by strong but not by diluted hydrochloric acid. The aqueous solution gives no precipitate with solution of iodine and iodide of potassium. absence of alkaloids

Official Meconate.—Liquor Morphinæ Bimeconatis.

In commerce $NaNO_3$ is used because (1) it is cheaper + (2) it yields weight for weight a larger amt of HNO_3

ACIDUM NITRICUM.

Nitric Acid.

An acid prepared from nitrate of potassium or nitrate of sodium by distillation with sulphuric acid and water.

The products of distillation pass into a condenser where it is met with a current of hot air + a little steam: this effectually oxidises any of the lower oxides of N. The distillate is then carried through a ser of Woulffs bottles the first few of which are empty the latter ones cont a little steam ∴ absorb every trace of acid the product is conducted lastly up a tower packed with flint stones down which a fine stream of H_2O is allowed to flow.

To get rid of As treat with a little Sn.
To purify from Fe or Cl redistil from $AgNO_3$ or KNO_3
The $NaNO_3$ employed in manufacture of HNO_3 is not allowed to contain more than ·5% NaCl on account of possibility of formation of an explosive [illegible] of N.

and containing 70 per cent. by weight of real nitric acid, HNO_3.

Characters and Tests.—A colourless liquid, having a specific gravity of 1·42. When exposed to the air it emits an acrid, corrosive vapour. If it be poured over copper filings, (1) dense red vapours are immediately formed; but if the acid be mixed with an equal volume of water, and then added to the copper, it gives off a colourless gas, which acquires an orange-red colour as it mixes with the air, and which, if it be introduced into a solution of sulphate of iron, communicates a dark purple or brown colour. The boiling point of the acid is 250° F. (121° C.) If submitted to distillation the product continues uniform throughout the process. It leaves little or no residue when evaporated to dryness. Diluted with six times its volume of distilled water, it gives no precipitate with chloride of barium or nitrate of silver. 90 grains by weight of it mixed with half an ounce of distilled water require for neutralisation 1000 grain-measures of the volumetric solution of soda.

If a stronger acid is distilled over oxides of N are given off & if a weaker acid is dist. it loses H_2O until the product has the S.G. 1·42 when the acid distils unchanged.

Preparations containing free Nitric Acid.

Acidum Nitricum Dilutum
,, Nitro-hydrochloricum Dilutum
Liquor Ferri Pernitratis
,, Hydrargyri Nitratis Acidus
Unguentum Hydrargyri Nitratis

Official Nitrates.

Ammonii Nitras
Argenti Nitras
Bismuthi Subnitras
Cupri Nitras
Ferri Pernitratis, Liquor
Hydrargyri Nitratis, Liq. Acid.
Pilocarpinæ Nitras
Plumbi Nitras
Potassii Nitras
Sodii Nitras

ACIDUM NITRICUM DILUTUM.

Diluted Nitric Acid.

Take of

Nitric Acid	6 fluid ounces
Distilled Water	a sufficiency

1 Conc. HNO_3 poured on Cu turnings gives dense red vapors of HNO_2, N_2O_3, NO_2, NO, & even N, the reaction varying somewhat with the amount of $Cu(NO_3)_2$ in solution & with the temperature. Dil. HNO_3 gives $Cu_3 + 8HNO_3 = 3Cu(NO_3)_2 + 2NO + 4H_2O$.

Dilute the acid with 24 fluid ounces of the water, then add more water, so that at a temperature of 60° F. (15°·5 C.) it shall measure 31 fluid ounces.

Or as follows:

Take of

Nitric Acid	2400 grains
Distilled Water	a sufficiency

Weigh the acid in a glass flask the capacity of which, to a mark on the neck, is one pint, then add distilled water until the mixture, at 60° F. (15°·5 C.) temperature, after it has been shaken, measures a pint.

Characters and Tests.—Colourless. Specific gravity 1·101. 361·3 grains by weight (6 fluid drachms) require for neutralisation 1000 grain-measures of the volumetric solution of soda corresponding to 17·44 per cent. of real nitric acid. Six fluid drachms therefore correspond to one molecular weight in grains of real nitric acid, HNO_3. 5 m contain about 1m of strong acid

Dose.—10 to 30 minims.

Tinct. Ferri Perchlor with an equal quantity of Ac. Nit. Mur. dil. in a mixture evolves sufficient gas to burst the bottle

ACIDUM NITRO-HYDROCHLORICUM DILUTUM.

Diluted Nitro-hydrochloric Acid.

Contains free chlorine, hydrochloric, nitric, and nitrous acids, and other compounds, dissolved in water.

Take of

Nitric Acid	3 fluid ounces
Hydrochloric Acid. . . .	4 fluid ounces
Distilled Water	25 fluid ounces

Add the acids to the water, and keep the mixture in a glass-stoppered bottle for fourteen days before it is used.

Characters and Tests.—Colourless. Specific gravity 1·07. 352 grains by weight (6 fluid drachms) require for neutralisation about 883 grain-measures of the volumetric solution of soda.

Dose.—5 to 20 minims. Chloronitr~~ic~~ous gas.

$2HNO_3 + 6HCl = 2NOCl + 4H_2O + 2Cl_2$

$2NOCl + 2H_2O = 2HCl + 2HNO_2$

$2HNO_3 + 6HCl = N_2O_2Cl_4 + 4H_2O + Cl_2$

Chloronitric gas

lmond Oil is saponified by boiling with NaOH or $Ca(OH)_2$. The resulting soap
ecomposed with HCl or H_2SO_4. The Oleic acid is washed & pressed out from any
tearic acid. Heated for some hours in a water bath with half its weight of
tharge (PbO). This is treated with ether which dissolves out the Oleate but
eaves the stearate. The ethereal solution decanted & mixed with HCl; the
liminated $HC_{18}H_{33}O_2$ is dissolved in the ether which is separated from the watery fluid + ether recovered by distillation. If colour is still dark it must be decolorized by animal charcoal.

leic acid is obtained commercially by decolorizing palm oil
ith sol: $K_2Cr_2O_7$. Steam heated to 500 or 600 °F. is passed through
e melted fat. Glycerine + fat acids formed distil over
ith steam, the acids
oating on the distillate
ese are pressed + treated
th PbO + ether as before.

ACIDUM OLEICUM.

Oleic Acid.

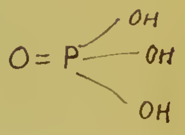
A fluid fatty acid, $HC_{18}H_{33}O_2$, obtained by the saponification of olein, or by the action of superheated steam on fats with subsequent separation from solid fats by pressure. Usually not quite pure.

Characters and Tests.—A straw-coloured liquid, nearly odourless and tasteless, and with not more than a very faint acid reaction. Unduly exposed to air it becomes brown and decidedly acid. Specific gravity 0·860 to 0·890. It is insoluble in water, but readily soluble in alcohol, chloroform, and ether. At 40° to 41° F. (4°·5 to 5° C.) it becomes semi-solid, melting again at 56° to 60° F. (13°·3 to 15°·5 C.) It should be completely saponified when warmed with carbonate of potassium, and an aqueous solution of this salt neutralised by acetic acid and treated with acetate of lead should yield a precipitate which after washing with boiling water is almost entirely soluble in ether. Palmitate + stearate of Pb are insoluble in ether.

Preparations containing Oleates and Oleic Acid.

Oleatum Hydrargyri
Oleatum Zinci
Unguentum Zinci Oleati

ACIDUM PHOSPHORICUM CONCENTRATUM.



Concentrated Phosphoric Acid.

Phosphoric acid, H_3PO_4, with 33·7 per cent. of water. It may be obtained by the following process:—

Take of

Phosphorus	413 grains
Nitric Acid	6 fluid ounces
Distilled Water	a sufficiency

Put the nitric acid diluted with eight ounces of distilled water into a glass flask, the mouth of which may be connected

$3P_4 + 20HNO_3 + 8H_2O = 12H_3PO_4 + 20NO$

If acid is too dilute H_3PO_3 will be formed

(1) By this means the aqueous vapour is condensed + flow back into the retort thus preventing the HNO_3 becoming too concentrated + oxidising the P with explosive rapidity. It moreover economises the HNO_3

with a vertical glass (1) condenser; and having added the phosphorus and connected the condenser, boil the contents at such a rate that all condensed products shall return to the flask. Continue the action until the phosphorus has entirely disappeared. Remove the condenser and concentrate the fluid, either in the flask or in a porcelain dish of hard well-enamelled ware, until it is reduced to four fluid ounces; then, transferring it to a platinum vessel, continue the evaporation until it is reduced to about two fluid ounces, and orange-coloured vapours are no longer formed. Mix it now with distilled water until when cold it measures three fluid ounces, and has a specific gravity of 1·5.

When P is burnt in air P_2O_5 is mainly produced but a certain amt. of P_2O_3 is also formed

Phosphoric acid may also be prepared from phosphorus by treatment of the product of atmospheric oxidation with water and a little nitric acid. $P_2O_5 + 3H_2O = 2H_3PO_4$ $P_2O_3 + 3H_2O = 2H_3PO_3$ $3H_3PO_3 + 2HNO_3 = 3H_3PO_4 + 2NO + H_2O$

Characters and Tests.—A colourless syrupy liquid with a sour taste and strongly acid reaction. With ammonio-nitrate of silver its diluted solution gives a canary-yellow precipitate soluble in ammonia and in diluted nitric acid. Evaporated it leaves a residue which melts at a low red heat, and upon cooling exhibits a glassy appearance. HPO_3 After dilution it is not precipitated by sulphuretted (2) hydrogen passed through the hot solution for a few minutes, nor by chloride of barium, nitrate of silver acidulated with nitric acid, or solution of albumen; and if neutralised by ammonia, and then a slight excess of acetic acid added, oxalate of ammonium does not immediately cause turbidity. When mixed with an equal volume of pure sulphuric acid, and then introduced into solution of sulphate of iron, it does not communicate to it a dark colour. (3) Diluted and mixed with an equal volume of solution of perchloride of mercury and heated, no precipitate is formed. 73·8 grains by weight of it mixed with 180 grains of oxide of (4) lead in fine powder leave by evaporation a residue (principally phosphate of lead) which after it has been heated to dull redness weighs 215·5 grains. $2HgCl_2 + H_2O + H_3PO_3 = 2HgCl + 2HCl + H_3P$

Absence of Pb due to evaporating in porcelain vessels which contain Pb As + Pt.

Absence : HPO_3 in ed [illegible] heating

Cannot be estimated with NaOH (4) on account of formation of Na_2HPO_4

Dose.—2 to 5 minims.

Preparations containing Phosphoric Acid.

Acidum Phosphoricum Dilutum | Syrupus Ferri Phosphatis

Official Phosphates.

Ammonii Phosphas	Ferri Phosphas
Calcii Phosphas	Sodii Phosphas

ACIDUM PHOSPHORICUM DILUTUM.

Diluted Phosphoric Acid.

Phosphoric acid, H_3PO_4, in solution in water to the extent of 13·8 per cent. by weight, corresponding to 10 per cent. of phosphoric anhydride, P_2O_5.

Take of

Concentrated Phosphoric Acid .	3 fluid ounces
Distilled Water	a sufficiency to form 20 fluid ounces

Mix.

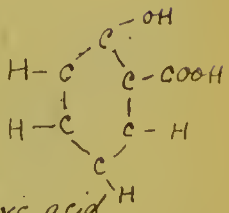
Characters and Tests.—A colourless liquid of specific gravity 1·08. 355 grains of it (six fluid drachms) mixed with 180 grains of oxide of lead in fine powder leave by evaporation a residue (principally phosphate of lead) which after it has been heated to dull redness weighs 215·5 grains. Six fluid drachms contain one half of the molecular weight of phosphoric acid in grains, 49 ($H_3PO_4=98$); equivalent to one fourth of the molecular weight of phosphoric anhydride in grains, 35·5 ($P_2O_5=142$). Its other characters and tests resemble those described in connection with concentrated phosphoric acid.

Diluted phosphoric acid may be prepared from a concentrated acid of any strength other than that described, provided the product have a specific gravity of 1·08, and respond to the other characters and tests already enumerated.

Dose.—10 to 30 minims.

ACIDUM SALICYLICUM.

Salicylic Acid.



$HC_7H_5O_3$. $C_6H_4 \cdot OH \cdot COOH$
orthohydroxybenzoic acid

A crystalline acid obtained by the combination of the elements of carbolic acid with those of carbonic acid

rol is dissolved in an equivalent quantity of NaOH Evaporate to dryness. Put
flask & heat to 160 °C & pass dry CO_2 over it. Finally heat to 250 °C

$$C_6H_5{-}OH + NaOH = NaC_6H_5O + H_2O$$
$$2NaC_6H_5O + CO_2 = C_6H_4{<}^{ONa}_{CO_2Na} + C_6H_5{-}OH$$

Cool dissolve in H_2O & add HCl

$$C_6H_4{<}^{ONa}_{CO_2Na} + 2HCl = C_6H_4 \cdot OH \cdot COOH + 2NaCl$$

Purify by recrystallization from S.V.R or H_2O

il oil of wintergreen with a moderately strong solution of KOH
dissolved acidify with HCl - filter recrystallize.

gas and subsequent purification, or from natural salicylates such as the oils of wintergreen (Gaultheria procumbens, *Linn.*) and sweet birch (Betula lenta, *Linn.*)

Characters and Tests.—In white inodorous crystals, which when minute are easily diffused and then are irritating to the nostrils; taste at first sweetish then acid. It is soluble in 500 to 700 parts of water at ordinary temperatures; readily soluble in alcohol, ether, and hot water; soluble also in solutions of citrate or acetate of ammonium, phosphate of sodium, or borax. The crystals melt at about 314·6° F. (157° C.), and below 392° F. (200° C.) volatilise without decomposition. The aqueous solution gives with solution of perchloride of iron a reddish-violet colour. An alcoholic solution allowed to evaporate spontaneously should leave a perfectly white residue. absence of Fe + inorganic impurities.

Dose.—5 to 30 grains.

Preparation.—Unguentum Acidi Salicylici.

Official Salicylate.—Sodii Salicylas.

ACIDUM SULPHURICUM.

Sulphuric Acid.

An acid produced by the combustion of sulphur and the oxidation and hydration of the resulting sulphurous acid gas by means of nitrous and aqueous vapours. It contains about 98 per cent. by weight of real sulphuric acid, H_2SO_4.

Characters and Tests.—A colourless liquid of oily consistence, intensely acid and corrosive. Specific gravity 1·843. It evolves much heat on the addition of water, and when thus diluted gives a copious precipitate with chloride of barium. 50 grains by weight, mixed with an ounce of distilled water, require for neutralisation 1000 grain-measures of the volumetric solution of soda. Evaporated in a platinum dish, it

1cc NaOH = ·049 grm H_2SO_4

$$\left.\right\} \quad SO_2 + H_2O = H_2SO_3$$

$$2HNO_3 + 3H_2SO_3 = 3H_2SO_4 + 2NO + H_2O$$

$$NO + O = NO_2$$

$$NO_2 + H_2SO_3 = H_2SO_4 + NO$$

or $$SO_2 + 2HNO_3 = H_2SO_4 + 2NO_2$$

or $$N_2O_3 + H_2SO_3 = H_2SO_4 + 2NO$$

leaves little or no residue. When a solution of sulphate of iron is carefully poured over its surface, there is no purple colour developed where the two liquids unite. "If a few drops be mixed with about a quarter of an ounce of a solution of stannous chloride mixed with strong hydrochloric acid, and the mixture be heated to boiling and then be allowed to cool, no darkening in colour and no precipitate should be produced,

Bettendorf's test for As

Preparations containing free Sulphuric Acid.

Acidum Sulphuricum Aromaticum
Acidum Sulphuricum Dil.
Infusum Cinchonæ Acidum
Infusum Rosæ Acidum

Official Sulphates.

Alumen et Alum. Exsic.
Atropinæ Sulphas
Beberinæ Sulphas
Calcii Sulphas
Cinchonidinæ Sulphas
Cinchoninæ Sulphas
Cupri Sulphas
Ferri Persulphatis, Liquor
,, Sulphas
Ferri Sulphas Exsiccata
,, ,, Granulata
Hydrargyri Persulphas
Magnesii Sulphas
Morphinæ Sulphas
Potassii Sulphas
Quininæ Sulphas
Sodii Sulphas
Zinci Sulphas

ACIDUM SULPHURICUM AROMATICUM.

Aromatic Sulphuric Acid.

Take of

Strong Tincture of Ginger	2 fl. ozs. . . . or	. 1 fl. part
Spirit of Cinnamon . .	2 fl. ozs. . . . ,,	. 1 fl. part
Rectified Spirit. . .	36 fl. ozs. . . ,,	. 18 fl. parts
Sulphuric Acid . .	3 fl. ozs. or 2419 grs.	,, . $1\frac{1}{2}$ fl. part

Mix the sulphuric acid gradually with the spirit, and add the spirit of cinnamon and tincture of ginger. Ethyl acid sulphate formed.

Tests.—Specific gravity ~~0·911~~ 0·926. 177 195 grains by weight require for neutralisation 500 grain-measures of the volumetric solution of soda, corresponding to about ~~12·5~~ 13·8 per cent. of real

If distilled ether wld be formed.

sulphuric acid. Six fluid drachms contain about 37·5 grains of real acid, H_2SO_4.

Dose.—5 to 30 minims.

Preparation containing Aromatic Sulphuric Acid.

Infusum Cinchonæ Acidum .	1 fluid part to 80 fluid parts

ACIDUM SULPHURICUM DILUTUM.

Diluted Sulphuric Acid.

Take of

Sulphuric Acid	7 fluid ounces
Distilled Water	a sufficiency

Dilute the acid with 77 fluid ounces of the water, and when the mixture has cooled to 60° F. (15°·5 C.) add more water, so that it shall measure 83½ fluid ounces. Set the mixture aside and decant from any sediment.

Or as follows:

Take of

Sulphuric Acid	1350 grains
Distilled Water	a sufficiency

Weigh the acid in a glass flask the capacity of which, to a mark on the neck, is one pint, then gradually add distilled water until the mixture, after it has been shaken and cooled to 60° F. (15°·5 C.), measures a pint.

Tests.—Specific gravity 1·094. 359 grains by weight (6 fluid drachms) of it require for neutralisation 1000 grain-measures of the volumetric solution of soda, corresponding to 13·65 per cent. of real sulphuric acid. Six fluid drachms therefore contain half a molecular weight in grains (49) of real sulphuric acid (H_2SO_4).

Dose.—5 to 30 minims.

Preparation containing Diluted Sulphuric Acid.

Infusum Rosæ Acidum .	1 fluid drachm in 10 fluid ounces

ACIDUM SULPHUROSUM.

Strong reducing agent in this respect differs from Cl which bleaches by oxidation.

Sulphurous Acid.

Sulphurous acid gas, or sulphurous anhydride, SO_2, dissolved in water, and constituting 5 per cent. by weight of the solution; equivalent to 6·4 per cent. of real sulphurous acid, H_2SO_3.

Take of

Sulphuric Acid	4 fluid ounces
Wood Charcoal, broken into small pieces	1 ounce
Water	2 fluid ounces
Distilled Water	30 fluid ounces

Put the charcoal and sulphuric acid into a glass flask, connected by a glass tube with a wash-bottle containing the two ounces of water, whence a second tube leads into a quart bottle containing the distilled water, to the bottom of which the gas-delivery tube should pass. Apply heat to the flask until gas is evolved, which is to be conducted through the water in the wash-bottle, and then into the distilled water, the latter being kept cold, and the process being continued until the bubbles of gas pass through the solution apparently undiminished in size. The product should be adjusted to the strength above mentioned by the method described in the following paragraph, and be kept in a stoppered bottle in a cool place.

Multiply % by 5 + add 1000 = Sp. Gr
a 10% sol is strongest S. G. 1.05

Characters and Tests.—A colourless liquid with a pungent sulphurous odour. Specific gravity 1·025. It gives but a very slight precipitate with chloride of barium, but a copious one if solution of chlorine be also added. 64 grains by weight of it mixed with one pint of recently boiled and cooled distilled water and a little mucilage of starch do not acquire a permanent blue colour with the volumetric solution of iodine until 1000 grain-measures of the latter have been added. When evaporated it leaves no residue.

To obviate as much as possible the formation of H_2SO_4

$H_2SO_3 + I_2 + H_2O = H_2SO_4 + 2HI$.

1 c.c. $\frac{N}{10}$ Iodine = ·0032 grm H_2SO_3

Dose.—½ to 1 fluid drachm.

Official Sulphite.—Sodii Sulphis.

The presence of CO_2 aids the solution of SO_2 in water

$SO_2 + H_2O = H_2SO_3$

95% $2H_2SO_4 + C = 2H_2O + 2SO_2 + CO_2$

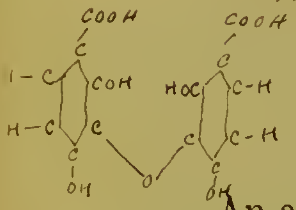
5% a little CO is also produced. $2H_2SO_4 + C_2 = 2H_2O + 2SO_2 + 2CO$

$H_2SO_3 + H_2O + Cl_2 = H_2SO_4 + 2HCl$

pure. $Hg + 2H_2SO_4 = HgSO_4 + SO_2 + 2H_2O$

Tannin is ppt. from its solution by albumenoid substances this being the principle of the formation of leather. Hence when milk is added to an infusion of tea leaves, leather is ppt. by the minute casein of the milk, in a minute state of subdivision

Probably the anhydride of Gallic acid, their mutual relations are not understood however.



ACIDUM TANNICUM.

Tannic Acid.

Digallic Acid $C_{14}H_{10}O_9$

$C_{27}H_{22}O_{17}$.

A mixture of glycerine & mucilage acacia makes an excellent excipient.

An acid extracted from galls. It may be obtained by the following process:—

Prepared by this method invariably contains a small quantity of Gallic acid

Take of

Galls in powder . . .	of each a sufficient quantity
Ether	

Expose the powdered galls to a damp atmosphere for two or three days, and afterwards add sufficient ether to form a soft paste. Let this stand in a well-closed vessel for twenty-four hours, then, having quickly enveloped it in a linen cloth, submit it to strong pressure in a suitable press, so as to separate the liquid portion. Reduce the pressed cake to powder, mix it with sufficient ether, to which (1) one-sixteenth of its bulk of water has been added, to form again a soft paste, and press this as before. Mix the expressed liquids, and expose the mixture to spontaneous evaporation until, by the aid subsequently of a little heat, it has acquired the consistence of a soft extract; then place it on earthen plates or dishes, and dry it in a hot-air chamber at a temperature not exceeding 212° F. (100° C.)

(1) Ether saturated with H_2O is a far better solvent than ether alone

It is an amorphous powder & cannot be crystallized

Characters and Tests.—In pale yellow vesicular masses or thin glistening scales, with a strongly astringent taste, and an acid reaction; readily soluble in water and rectified spirit, very sparingly soluble in ether. The aqueous solution precipitates solution of isinglass yellowish-white, and the persalts of iron of a bluish-black colour. It leaves no residue when burned with free access of air.

Dose.—2 to 10 grains.

Preparations.

Glycerinum Acidi Tannici .	1 part in 6 by weight
Suppositoria Acidi Tannici .	3 grains in each suppository
" " " cum Sapone .	
Trochisci Acidi Tannici .	½ grain in each lozenge

ACIDUM TARTARICUM.

Tartaric Acid.

$H_2C_4H_4O_6$.

$$\left.\begin{array}{l} COOH \\ CHOH \\ CHOH \\ COOH \end{array}\right\}$$

An acid prepared from the acid tartrate of potassium. It may be obtained by the following process:—

Take of

Acid Tartrate of Potassium	45 ounces
Distilled Water	a sufficiency
Prepared Chalk	12½ ounces
Chloride of Calcium	13½ ounces
Sulphuric Acid	13 fluid ounces

Boil the acid tartrate of potassium with two gallons of the water, and add gradually the chalk, constantly stirring. When the effervescence has ceased, add the chloride of calcium dissolved in two pints of the water. When the tartrate of calcium has subsided, pour off the liquid, and wash the tartrate with distilled water until it is rendered tasteless. Pour the sulphuric acid first diluted with three pints of the water on the tartrate of calcium, mix thoroughly, boil for half an hour with repeated stirring, and filter through calico. Evaporate the filtrate at a low temperature until it acquires the specific gravity of 1·21, allow it to cool, and then separate and reject the crystals of sulphate of calcium which have formed. Again evaporate the clear liquor till a film forms on its surface, and allow it to cool and crystallise. Lastly purify the crystals by solution, filtration (if necessary), and recrystallisation.

Characters and Tests.—In colourless crystals, the primary form of which is the oblique rhombic prism. It has a strongly acid taste, and is readily soluble in less than its own weight of water and in less than three times its weight of rectified spirit. When to either solution, not too much diluted, a little acetate of potassium is added, a white crystalline precipitate is formed. Twenty-five grains of crystallised tartaric acid dissolved in water require for neutralisation 330 grain-

$$2\,KHC_4H_4O_6 + CaCO_3 = CaH_4C_4O_6 + K_2C_4H_4O_6 + H_2O + CO_2$$

$$K_2C_4H_4O_6 + CaCl_2 = Ca\,C_4H_4O_6 + 2\,KCl$$

$$Ca\,C_4H_4O_6 + H_2SO_4 = H_2C_4H_4O_6 + CaSO_4$$

1 c.c N. $NaOH$ = ·075 grm $H_2C_4H_4O_6$

measures of the volumetric solution of soda. An aqueous solution of the acid is not affected by sulphuretted hydrogen, and gives no precipitate with the solution of sulphate of calcium or of oxalate of ammonium. It leaves no residue, or only a mere trace, when burned with free access of air.

Absence of Oxalic acid.

The powdered tartaric acid of trade, also, should respond to the foregoing tests.

Dose.—10 to 30 grains.

Official Tartrates.

Antimonium Tartaratum
Ferrum Tartaratum
Potassii Tartras
Potassii Tartras Acida
Sodii Citro-tartras Effervescens
Soda Tartarata

ACONITI FOLIA. N.O. Ranunculaceae.

Aconite Leaves.

The fresh leaves and flowering tops of Aconitum Napellus, *Linn.*, gathered when about one-third of the flowers are expanded, from plants cultivated in Britain. *Bentl. and Trim. Med. Pl.* vol. i. plate 6.

Characters.—Leaves alternate, with long channelled stalks, very deeply cut palmately into 5 or 3 segments, which are again deeply and irregularly divided into oblong acute narrow lobes; exciting slowly, when chewed, a sensation of tingling and numbness. Flowers large, irregular, deep blue, in a somewhat loose terminal raceme.

Preparation.—Extractum Aconiti.

Prin. Const. Aconitine in small quantities combined with aconitic gum, albumen, chlorophyll.

ACONITI RADIX.

Aconite Root.

The root of Aconitum Napellus, *Linn.*, collected in the winter or early spring before the leaves have appeared, from plants cultivated in Britain, and carefully dried; or imported in a dried state from Germany.

Characters.—Usually from about two to three inches long, and from half to three-quarters of an inch thick at the upper extremity, where it is usually crowned with the remains of the base of the stem; conical in form, much shrivelled longitudinally, and more or less covered with the scars or bases of broken rootlets; dark brown externally, whitish within, and having a central cellular axis with about seven rays. No marked odour; taste at first somewhat bitterish-sweet, but exciting slowly, when chewed, after some minutes, a sensation of tingling and numbness, which lasts for some time.

Preparations.

Aconitina, the active principle
Linimentum Aconiti, 1 ounce to 1½ fluid ounce
Tinctura Aconiti, 54½ grains to 1 fluid ounce

·07 % alkaloids :- aconitine, pseudaconitine aconine
pseudaconine picraconitine. Aconitic acid resin fat sugar (mannite.)

ACONITINA.

Aconitine.

Synonym.—Aconitia.

An alkaloid obtained from aconite root.

Take of

Aconite Root, in coarse powder	any convenient quantity
Rectified Spirit	of each a sufficiency
Distilled Water	
Solution of Ammonia	
Pure Ether	
Diluted Sulphuric Acid	

Mix the aconite root with twice its weight of the spirit, and apply heat until ebullition commences; then cool and macerate for four days. Transfer the whole to a displacement apparatus, and percolate, adding more spirit, when requisite, until the root is exhausted. Distil off the greater part of the spirit from the tincture, and evaporate the remainder over a water-bath until the whole of the alcohol has been dissipated. Mix the residual extract thoroughly with twice its weight of boiling distilled water, and when it has cooled to the temperature of the atmosphere, filter through paper. To the filtered liquid add solution of ammonia in slight excess, and heat them gently over a water-bath. Separate the precipitate on a filter, and dry it. Reduce this to coarse powder, and macerate it in successive portions of the pure ether with frequent agitation. Decant the several products, mix, and distil off the ether until the extract is dry. Dissolve the dry extract in warm distilled water acidulated with the sulphuric acid; and, when the solution is cold, precipitate it by the cautious addition of solution of ammonia diluted with four times its bulk of distilled water. Wash the precipitate on a filter with a small quantity of cold distilled water, and dry it by slight pressure between folds of filtering paper and subsequent exposure to air.

Characters and Tests.—A white, usually amorphous, solid; soluble in 150 parts of cold, and 50 of hot water, and much more soluble in alcohol, in ether, and in chloroform; strongly alkaline to reddened litmus, neutralising acids, and precipitated from solutions of its salts by the caustic alkalies, but not by carbonate of ammonium or the bicarbonates of sodium or potassium. It melts when heated, and burns with a smoky flame, leaving no residue if ignited with free access of air. When rubbed on the skin it causes a tingling sensation, followed by prolonged numbness. It is a very active poison.

Preparation.

Unguentum Aconitinæ . . 8 grains to 1 ounce

ADEPS BENZOATUS.

Benzoated Lard.

Take of

Prepared Lard . .	1 pound	or . .	50 parts
Benzoin, reduced to coarse powder . . .	140 grains . .	,, . .	1 part

Melt the lard by the heat of a water-bath, add the benzoin, and, frequently stirring them together, continue the application of heat for two hours; finally remove the residual benzoin by straining.

Preserving properties of the benzoin due to the benzoic acid + probably traces of resin dissolved out by the melted fat. about ·4 % of Benzoic acid in Ad. Benz.

Preparations.

Unguentum Aconitinæ
,, Atropinæ
,, Belladonnæ
,, Calaminæ
,, Chrysarobini
,, Gallæ
,, Hydrargyri Subchloridi
Unguentum Iodoformi
,, Plumbi Acetatis
,, Potassii Iodidi
,, Sabinæ
,, Simplex
,, Staphisagriæ
,, Sulphuris
,, Zinci

ADEPS PRÆPARATUS.

Prepared Lard.

The purified fat of the hog, Sus scrofa, *Linn.* N.O. Pachydermata.

Take of

The internal fat of the abdomen of the hog, perfectly fresh . . . } any convenient quantity

Remove as much of the external membranes (1) as possible, and suspend the fat so that it shall be freely exposed to the air for some hours; then cut it into small pieces, and beat these in a stone mortar until they are thus, or by some equivalent process, reduced to a uniform mass in which the membranous vesicles are completely broken. Put the mass thus produced into a vessel surrounded by warm water, and apply a temperature not exceeding 130° F. (54°·4 C.) until the fat has melted and separated from the membranous matter. Finally strain the melted fat through flannel.

(1) To effect the destruction of odour always present in freshly slaughtered carcases.

Characters and Tests.—A soft white fatty substance, melting at about 100° F. (37°·8 C.) Has no rancid odour; dissolves entirely in ether. Distilled water in which it has been

contains 62 % Oleine + 38 % Stearine. If subjected to D pressure the
ater portion of the Oleine (known as lard oil in commerce) separates.
is the oleine which become rancid - Stearine does not.

Hot alcohol agitated with lard does not acquire an acid reaction (absence of resins stearic & other acids.)

Frequently contains H_2O which causes it to go mouldy. The amount may be estimated by heating a known weight on a sand bath. Cool. weigh. The amount should be constant.

boiled, when cooled and filtered, gives no precipitate with nitrate of silver, and is not rendered blue by the addition of solution of iodine. (Absence of rice starch etc.)

Preparations.

Adeps Benzoatus
Emplastrum Cantharidis
Unguentum Hydrargyri
Unguentum Hydrargyri Nitratis
,, Iodi
,, Terebinthinæ

Æther Ozonicus. Cent Throat H.
Ether containing in solution H_2O_2 of 30 vol. strength with some alcohol.

ÆTHER.

Ether.

Synonym.—Sulphuric Ether.

A volatile liquid prepared from alcohol, and containing not less than 92 per cent. by volume of pure ether $(C_2H_5)_2O$. Oxide of Ethyl.

Take of

Rectified Spirit	50 fluid ounces
Sulphuric Acid	10 fluid ounces
Chloride of Calcium . . .	10 ounces
Slaked Lime	½ ounce
Distilled Water	13 fluid ounces

Mix the sulphuric acid with twelve fluid ounces of the spirit in a glass flask having a wide neck and capable of containing at least two pints, and, not allowing the mixture to cool, connect the flask by means of a bent glass tube with a Liebig's condenser, and distil at a temperature sufficient to maintain the liquid in brisk ebullition. As soon as the ethereal fluid begins to pass over, supply fresh spirit through a tube (1) into the flask in a continuous stream, and in such quantity as to equal the volume of the fluid which distils over. For this purpose use a tube furnished with a stopcock to regulate the supply, connecting one end of the tube with a vessel containing the spirit raised above the level of the flask, and passing the other end into the acid fluid through a cork fitted into the (2) flask. When the whole of the spirit has been added, and forty-two fluid ounces have distilled over, the process may be stopped.

(2) This equals the amount of absolute alcohol in the S. V. R. used.

(1) This tube must pass to the bottom of the liquid otherwise the alcohol will distil over undecomposed.

Blackening takes place in the retort due to secondary decomposition }.

lcohol + H_2SO_4 react sulphethylic acid (Ethyl hydrogen sulphate) is produced.
$H + H_2SO_4 = C_2H_5HSO_4 + H_2O$ This acid reacting with more alcohol produces ether
huric acid $C_2H_5OH + C_2H_5HSO_4 + (C_2H_5)_2O + H_2SO_4$. The Ether commences to distil at
C. Alcohol should then be allowed to flow into retort in such quantity as
maintain the temp. between 140 + 144 °C. When 42 fl. ozs. have distd. process is
pped The H_2SO_4 having such an affinity for H_2O becomes diluted to such an
nt that it is unable to react with alcohol.

Dissolve the chloride of calcium in the water, add the lime,(1) and agitate the mixture in a bottle with the impure ether. Leave the mixture at rest for ten minutes, pour off the light supernatant fluid, and distil it until a glass bead of specific gravity 0·735 placed in the receiver begins to float. The ether and spirit retained by the chloride of calcium and by the residue of each rectification may be recovered by distillation and used in a subsequent operation.

when temp reaches 154 °C oil of wine distils over & at a still higher one C_2H_4

(1) H_2SO_3 is formed in the reaction due to the reduction of H_2SO_4 by carbonaceous matter. It is absorbed by the lime.

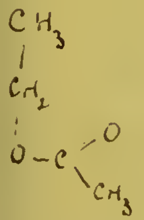
Characters and Tests.—A colourless very volatile and inflammable liquid, emitting a strong and characteristic odour, and boiling below 105° F. (40°·5 C.) Specific gravity 0·735. Fifty measures agitated with an equal volume of water are reduced to 45, by an absorption of 10 per cent. It evaporates without residue.

Methylated Ether (other than S.G. ·717 (purified)) leaves an odour after it has evaporated.

Dose.—20 to 60 minims.

Preparations.

Æther Purus	
Collodium	6 volumes in 8, nearly
,, Flexile	6 volumes in 8 ,,
Spiritus Ætheris	1 volume in 3
,, ,, Compositus .	1 volume in 3, nearly
Tinctura Chloroformi et Morphinæ	1 volume in 32



ÆTHER ACETICUS.

Acetic Ether.

Synonym.—Acetate of Ethyl.

$C_2H_5C_2H_3O_2$.

Can also be prepared by mixing acetic ~~acid~~ anhydride + absolute alcohol & distilling from $CaCl_2$.

May be obtained by the following process:—

Take of

Rectified Spirit	32¼ fluid ounces
Sulphuric Acid	32½ fluid ounces
Acetate of Sodium, dried [illegible] . .	40 ounces
Carbonate of Potassium, freshly dried . .	6 ounces

In nascent acetic acid acting on the alcohol produces acetic ether.

Tests. Digest with a
little KOH or Na OH
+ divide into 2 portions.

(1.) Add Iodine + warm:- iodoform produced
(2.) neutralize + add Fe_2Cl_6 - a red
colour produced.

To the spirit slowly add the acid, keeping the fluid cool, and, the product being cold, add the acetate, mixing thoroughly. Distil forty-five fluid ounces. Digest the distillate with the carbonate of potassium for three days in a stoppered bottle. Separate the ethereal fluid, and again distil until all but about four fluid ounces have passed over. Preserve the resulting acetic ether in a well-closed bottle and in a cool place.

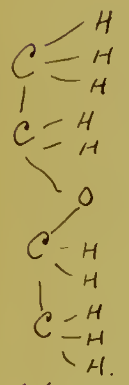
chiefly alcohol

Characters and Tests.—A colourless liquid with an agreeable ethereal odour. Specific gravity about 0·900. Boiling point about 166° F. (74°·4 C.) Soluble in all proportions in rectified spirit and in ether. One part, by weight, dissolves in about 10 parts of water at 60° F. (15°·5 C.)

absence of H_2O + alcohol

Dose.—20 to 60 minims.

Preparation in which Acetic Ether is used.—Liquor Epispasticus.



ÆTHER PURUS.

Pure Ether.

Pure ether is obtained by distilling:-
$C_2H_5Br + C_2H_5ONa = (C_2H_5)_2O + NaBr$

Synonym.—Oxide of Ethyl.

Ether $(C_2H_5)_2O$, free from alcohol and water.

Take of

Ether . . Distilled Water	of each 2 pints	. . . or . .	40 fluid parts
Lime, recently prepared	1 ounce	. . ,, . .	1 part
Chloride of Calcium .	4 ounces	. . ,, . .	4 parts

Last trace of alcohol may be removed by distillation from P_2O_5.

Put the ether with half of the water into a bottle, and shake them together; allow them to remain at rest for a few minutes, and when the two liquids have separated, decant off the supernatant ether; mix this with the remainder of the water, and again, after separation, decant as before. Put now the washed ether, together with the lime and chloride of calcium, into a retort to which a receiver is closely attached, let them stand for twenty-four hours, then distil. by a water bath at a gentle heat.

Test.—Specific gravity not exceeding 0·720. When shaken with a fourth of its bulk of solution of iodide of potassium and a little starch paste, little or no blue colour is produced.

Absence of H_2O_2. C_2H_4O

The ether vapour with the air + moisture in the air of the bottle in which the ether is stored, react + produce ethyl peroxide which with H_2O produces alcohol, ether, + hydrogen peroxide sel oil from the distilleries is first distilled at 100°C. residue washed [illegible] to remove propylic + butylic alcohols which are soluble. The upper is introduced into a fractionating flask. Distil till the temp. registers [illegible] The receiver is changed & the portion distilled between 128 + 132°C is reserved as Amylic alcohol, the flask + fractionating tube being protected from draught.

ALCOHOL AMYLICUM.

Amylic Alcohol.

Synonyms.—Fousel Oil; Hydrate of Amyl.

Amylic alcohol, $C_5H_{11}HO$, with a small proportion of other spirituous substances. A liquid of oily consistence, contained in the crude spirit produced by the fermentation of saccharine solutions with yeast, and separated in the rectification or distillation of such crude spirit. It should be redistilled, and the product passing over at 262° to 270° F. (about 128° to 132° C.) be alone collected for use.

Characters and Tests.—A colourless liquid with a penetrating and oppressive odour, and a burning taste. When pure its specific gravity is 0·818. Sparingly soluble in water, but soluble in all proportions in alcohol, ether, and essential oils. "Exposed to the air in contact with platinum-black, it is slowly oxidised, yielding valerianic acid." $C_5H_{11}OH + O_2 = HC_5H_9O_2 + H_2O$

Preparations for which Amylic Alcohol is used.

Amyl Nitris	Sodii Valerianas

ALCOHOL ETHYLICUM.

Ethylic Alcohol.

Synonym.—Absolute Alcohol.

C_2H_5HO.

Take of

Rectified Spirit	1 pint
Carbonate of Potassium, anhydrous	2 ounces
Chloride of Calcium, fused	a sufficiency

Add the carbonate of potassium to the spirit in a stoppered bottle, and macerate for twenty-four hours with frequent agitation. Put the chloride of calcium into a covered crucible, and subject it to a red heat for half an hour; then pour the fused salt on to a clean stone slab, cover it quickly with an inverted porcelain dish, and when it has congealed, break it up into small fragments, and enclose it in a dry stoppered bottle. Put one pound of this fused chloride of calcium into a flask, pour over it the spirit decanted from the carbonate of potassium, and closing the mouth of the flask with a cork, shake them together and allow them to stand for twenty-four hours with repeated agitation. Then attaching a dry condenser closely connected with a receiver from which free access of air is excluded, and applying the flame of a lamp to the flask, distil about two fluid ounces, which should be returned to the flask, after which the distillation is to be continued until fifteen fluid ounces have been recovered.

would be a better product if distilled from anhydrous $CuSO_4$

Characters and Tests.—Colourless and free from empyreumatic odour. Specific gravity from 0·797 to 0·800, and, therefore, containing one, or at most two, per cent. of water. It is entirely volatilised by heat, is not rendered turbid when mixed with water, and does not cause anhydrous sulphate of copper to assume a decided blue colour even after the two have been well shaken together. Absence of H_2O

Absence of oily & resinous matter

Preparations in which Ethylic Alcohol is used.

Chloroform │ Liquor Sodii Ethylatis

N.O. Liliaceae.
Aloe vulgaris indigenous
to India & N.E. Africa.

ALOE BARBADENSIS.

Barbadoes Aloes.

The juice, when inspissated, which flows from the transversely cut bases of the leaves of Aloe vulgaris, *Lam.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 282. Imported from Barbadoes and the Dutch West Indian Islands, and known in commerce as Barbadoes and Curaçoa Aloes.

Characters and Tests.—Colour varying from deep reddish-brown or chocolate-brown to dark brown or almost black; fracture usually dull and waxy, or sometimes smooth and glassy; opaque in mass, but in thin films translucent and of an orange-brown tint; powder dull olive-yellow. Odour strong and disagreeable; taste bitter and nauseous. The

action of strong HNO_3 on Barbadoes aloes results in a crimson coloration
does not fade for some time. Natal aloes is similarly acted upon
otrine & hepatic aloes give no such colouration.

Curaçoa variety is commonly more glassy and translucent than the ordinary Barbadoes kind, and has a distinctive odour. When moistened with rectified spirit and examined in a thin stratum under the microscope, it exhibits numerous crystals. Almost entirely soluble in proof spirit.

Dose.—2 to 6 grains.

P.C. An essential oil, resins + a characteristic aloin.

Preparations.

Aloin	
Enema Aloes	4 grains in 1 fluid ounce
Extractum Aloes Barbadensis .	8 parts from 10, nearly
Pilula Aloes Barbadensis . .	1 part in 2, nearly
" " et Ferri . . .	1 part in $5\frac{1}{4}$
" Cambogiæ Composita . .	1 part in 6, nearly
" Colocynthidis Composita .	1 part in 3, nearly
" " et Hyoscyami	1 part in $4\frac{1}{2}$, nearly

Aloes is not the juice of the whole leaf which will be at once observed by the fact that it contains no chlorophyll. It is found in the sieve tubes which occupy a circular zone in the centre of the leaf.

s are composed of
olic substances which
nts for its keep-
properties.

ALOE SOCOTRINA.

Socotrine Aloes.

The juice, when inspissated, which flows from the transversely cut bases of the leaves of Aloe Perryi, *Baker*; Bot. *Mag*. plate 6596; and probably other species. Imported principally by way of Bombay and Zanzibar, and known in commerce as Socotrine and Zanzibar Aloes.

A. socotrina
A. abyssinica

Characters and Tests.—Colour of various shades of reddish-brown, darkening by exposure to the air; fracture usually smooth and resinous, or rarely rough and irregular; in thin films transparent and orange-ruby-red or orange-brown; powder bright tawny reddish-brown; odour strong and somewhat agreeable; taste very bitter. When moistened with rectified spirit and examined in a thin stratum under the microscope, it exhibits numerous crystals. In other cases Socotrine aloes is more or less opaque and liver-coloured, and is then known as hepatic aloes. Almost entirely soluble in proof spirit.

Dose.—2 to 6 grains.

P.C. A peculiar aloin + resin besides traces of a volatile oil.
The so called hepatic aloes was originally obtained from the sediment deposited from the fresh juice in the preparation of Soc. Aloes.
The term is now applied to any poor variety of E. African aloes.

Preparations.

Aloin	
Decoctum Aloes Compositum (Extract)	4 grains in 1 fluid ounce
Enema Aloes	4 grains in 1 fluid ounce
Extractum Aloes Socotrinæ	1 part from 2, nearly
,, Colocynthidis Compositum (Extract)	1 part in $2\frac{1}{4}$, nearly
Pilula Aloes et Asafœtidæ	1 part in 4
,, ,, et Myrrhæ	1 part in 3
,, ,, Socotrinæ	1 part in 2, nearly
,, Rhei Composita	1 part in 6
Tinctura Aloes	11 grains to 1 fluid ounce
,, Benzoini Composita	8 grains to 1 fluid ounce
Vinum Aloes	$16\frac{1}{2}$ grains to 1 fluid ounce

Commercial aloin chiefly Barbaloin.

ALOIN.

Aloin. is a complex phenol.

$C_{16}H_{18}O_7$.

A crystalline substance extracted from aloes by solvents and purified by recrystallisation. As obtained from the different varieties of aloes, the products differ slightly, but their medicinal properties are similar.

Characters.—Usually in tufts of acicular crystals, yellow, inodorous, and having the taste of aloes. Sparingly soluble in cold water, more so in cold rectified spirit, freely soluble in the hot fluids. Insoluble in ether. Not readily altered in acidified or neutral solutions; rapidly altered in alkaline fluids. Heat converts it into an amorphous resin.

Dose.—$\frac{1}{2}$ grain to 2 grains.

ALUMEN.

Alum.

$Al_23SO_4,K_2SO_4,24H_2O$ or $Al_23SO_4,(NH_4)_2SO_4,24H_2O$.

Sulphate of aluminium and potassium (Potassium Alum or Potash Alum), or of aluminium and ammonium

Aluminous schists are calcined & exposed to the air. FeS_2 is oxidised to $FeSO_4$:- $2FeS_2 + 7O_2 = 2FeSO_4 + 2H_2SO_4$. The H_2SO_4 set free acts on the alumina forming $Al_2(SO_4)_3$:- $3H_2SO_4 + (SiO_2)_3Al_2O_3 = Al_2(SO_4)_3 + 3H_2SiO_3$. The calcined material is digested with H_2O & solution concentrated by evaporation. After settling the clear liquid is poured off & mixed with the requisite quantity of KCl. The liquor is set aside to crystallize, the crystals washed drained & recrystallized.

$$Al_2(SO_4)_3 + 2KCl + FeSO_4 + 24H_2O = Al_2(SO_4)_3.K_2SO_4.24H_2O + FeCl_2$$

(Ammonium Alum or Ammonia Alum), crystallised from solution in water.

Characters and Tests.—In colourless transparent crystalline masses, exhibiting the faces of the regular octahedron, and having an acid sweetish astringent taste. Its aqueous solution gives with caustic potash or soda a white precipitate soluble in an excess of the reagent; yields an immediate precipitate with chloride of barium; and affords little or no blue colour on the addition of ferrocyanide or ferricyanide of potassium. It is soluble in ten or eleven parts of water at common temperatures. absence of Fe.

Dose.—10 to 20 grains.

Preparation.—Glycerinum Aluminis, 1 pt. in 7¼ by weight.

ALUMEN EXSICCATUM.

Dried Alum.

$Al_2 3SO_4, K_2SO_4.$

Take of

Potassium Alum	4 ounces

Heat the alum in a porcelain dish or other suitable vessel till it liquefies, then raise and continue the heat, not allowing it to exceed 400° F. (204°·4 C.), till aqueous vapour ceases to be disengaged, and the salt has lost between 45 and 46 per cent. of its weight. Reduce the residue to powder, and preserve it in a well-stoppered bottle.

Character.—It is slowly but completely soluble in water.

AMMONIACUM.

Ammoniacum. N.O. Umbelliferae

A gum-resinous exudation from the stem (after being punctured by beetles) of Dorema Ammoniacum, *Don*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 131. Persia & Turkestan

Characters and Tests.—In roundish tears varying in size from that of a coriander fruit to a cherry, or in nodular masses of agglutinated tears of various sizes and forms; pale yellowish-brown externally when recent, but darkening by keeping to cinnamon brown, milky white and opaque internally; hard and brittle when cold, and breaking with a faint waxy fracture, but readily softening with heat. It has a faint peculiar non-alliaceous odour, and a bitter acrid taste. When triturated with water it forms a nearly white emulsion. It is coloured yellow by caustic potash; and a solution of chlorinated soda gives it a bright orange hue. 1:C. Vol: In free from S ½% 4%

Resin 70% Gum 18%–22%

Dose.—10 to 20 grains. Moisture 5% Ash 3%

Preparations. Does not yield umbelliferon.

Emplastrum Ammoniaci cum Hydrargyro	12 parts in 15
,, Galbani	1 part in 11
Mistura Ammoniaci	13½ grains to 1 fluid ounce, nearly
Pilula Scillæ Composita	1 part in 6¼, nearly
,, Ipecacuanhæ cum Scilla	1 part in 7

AMMONII BENZOAS.

Benzoate of Ammonium.

Synonyms.—Ammoniæ Benzoas; Benzoate of Ammonia.

$$NH_4C_7H_5O_2.$$

Take of

Solution of Ammonia	3 fluid ounces, or a sufficiency
Benzoic Acid	2 ounces
Distilled Water	4 fluid ounces

Dissolve the benzoic acid in three fluid ounces of solution of ammonia previously mixed with the water; evaporate, keeping ammonia in slight excess; and set aside that crystals may form.

Characters and Tests.—In colourless laminar crystals, soluble in water and in alcohol. It gives a bulky yellowish precipitate with persalts of iron. Its aqueous solution when

$C_6H_5COOH + NH_4OH = C_6H_5COONH_4 + H_2O.$

heated with caustic potash evolves ammonia, and, if it be not too dilute, when acidulated with hydrochloric acid it gives a deposit of benzoic acid. When heated it sublimes without residue.

Dose.—10 to 20 grains.

AMMONII BROMIDUM.

Is largely prepared by adding a solution of $N_3H_4C_2O_5$ to $FeBr_2$.

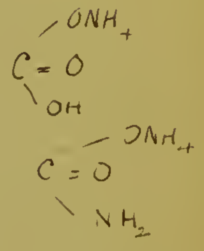
Bromide of Ammonium.

NH_4Br.

May be formed by neutralising hydrobromic acid with ammonia, evaporating and crystallising.

Characters and Tests.—In colourless crystals, which may become slightly yellow by exposure to the air. Has a pungent saline taste. May be sublimed unchanged by the application of heat. Readily soluble in water; less soluble in spirit. Does not give any immediate yellow colour on being moistened — absence of Bromates — with diluted sulphuric acid. A solution of the salt in water, mixed with mucilage of starch and a drop of an aqueous solution of bromine or chlorine, does not exhibit any blue — absence of Iodides — colour. The aqueous solution gives only a faint cloudiness with chloride of barium. Five grains dissolved in an ounce of distilled water to which two drops of solution of yellow chromate of potassium have been added require not more than 514·5 and not less than 508·5 grain-measures of the volumetric solution of nitrate of silver to produce a permanent red precipitate. $1\ c.c.\ \frac{N}{10} = \cdot 0098$ grm NH_4Br

Dose.—2 to 20 grains.



AMMONII CARBONAS.

Carbonate of Ammonium.

Synonyms.—Ammoniæ Sesquicarbonas; Ammoniæ Carbonas; Carbonate of Ammonia.

$N_3H_{11}C_2O_5$. $\left.\begin{matrix} NH_4HCO_3 \\ NH_4NH_2\cdot CO_2 \end{matrix}\right\}$

A volatile and pungent ammoniacal salt, produced by submitting a mixture of sulphate or chloride of ammonium

NH_4Cl or $NH_4)_2SO_4$ is mixed with an excess of $CaCO_3$ or preferably magnesite (a better by-product) $MgCO_3$. It is then submitted to sublimation & the product obtained is a white powder which is normal $NH_4)_2CO_3$

This is mixed with a requisite amount of H_2O & resublimed, the sublimate in this case being a fibrous crystalline mass consisting of carbamate & acid carbonate.

and carbonate of calcium to sublimation and resublimation. It is considered to be a compound of acid carbonate of ammonium (NH_4HCO_3) with carbamate of ammonium ($NH_4NH_2CO_2$), and the compound molecule is usually regarded as containing one molecule of each of these salts.

Characters and Tests.—In translucent crystalline masses, with a strong ammoniacal odour, and alkaline reaction; soluble in cold water, more sparingly in spirit. It volatilises Absence of fixed salts—entirely when heated, and is readily dissolved by acids with effervescence. If diluted nitric acid be added to it in slight excess, and the solution be boiled, it will give no precipitate with chloride of barium or nitrate of silver. 52·3 grains dissolved in one ounce of distilled water will be neutralised by 1000 grain-measures of the volumetric solution of oxalic acid.

1 C.C.: $\frac{N}{2}$ Ox. Acid = ·0523 grm $N_3H_{11}C_2O_5$

20 grains of Carbonate of Ammonium } neutralise { $26\frac{3}{4}$ grains Citric Acid
$28\frac{3}{4}$ grains Tartaric Acid

Dose.—3 to 10 grains.

Preparations for which Carbonate of Ammonium is used.

Bismuthi Carbonas
Liquor Ammonii Acetatis Fortior
Spiritus Ammoniæ Aromaticus

AMMONII CHLORIDUM.

Chloride of Ammonium.

Synonym.—Sal Ammoniac.

NH_4Cl.

May be formed by neutralising hydrochloric acid with ammonia or carbonate of ammonium and evaporating to dryness. It is usually prepared by sublimation.

Characters and Tests.—In colourless inodorous minute crystals, or in translucent fibrous masses, tough, and difficult to powder; soluble in water and in rectified spirit. Its aqueous solution when heated with caustic potash evolves ammonia, and when treated with nitrate of silver forms a copious curdy precipitate. When heated it volatilises without decomposition, and leaves no residue.

Dose.—5 to 20 grains.

Preparations for which Chloride of Ammonium is used.

Liquor Hydrargyri Perchloridi, ½ grain in 1 fluid ounce
Liquor Ammoniæ Fortior

AMMONII NITRAS.

Nitrate of Ammonium.

Synonyms.—Ammoniæ Nitras; Nitrate of Ammonia.

NH_4NO_3.

Produced by neutralising diluted nitric acid with solution of ammonia or carbonate of ammonium, evaporating the solution until crystals are obtained, and keeping these fused at a temperature not exceeding 320° F. (160° C.) until the vapour of water is no longer emitted.

Characters and Tests.—A white deliquescent salt, in confused crystalline masses, having a bitter acrid taste. Soluble in less than its own weight of water, and sparingly soluble in rectified spirit. A solution of one part in eight parts of distilled water gives no precipitate with solution of nitrate of silver or of chloride of barium. Heated with caustic potash, it evolves ammonia; with sulphuric acid it emits nitric acid vapour. It fuses at a temperature of 320° F. (160° C.), and at 350° F. (176°·7 C.) to 450° F. (232°·2 C.) it is entirely resolved into nitrous oxide gas, N_2O, and the vapour of water.

$NH_4NO_3 = N_2O + 2H_2O$

AMMONII PHOSPHAS.

Phosphate of Ammonium.

Synonyms.—Ammoniæ Phosphas; Phosphate of Ammonia.

$(NH_4)_2HPO_4$.

Take of

Diluted Phosphoric Acid . .	20 fluid ounces
Strong Solution of Ammonia .	a sufficiency

Add the ammonia to the phosphoric acid until the solution is slightly alkaline, then evaporate the liquid, adding more ammonia from time to time, so as to keep it in slight excess, and when crystals are formed, on the cooling of the solution, dry them quickly on filtering paper placed on a porous tile, and preserve them in a stoppered bottle.

Characters and Tests.—In transparent colourless prisms. Soluble in water, insoluble in rectified spirit. When heated with caustic potash, ammonia is evolved. The aqueous solution gives a yellow precipitate with nitrate of silver. If twenty grains of this salt be dissolved in water and solution of ammonio-sulphate of magnesium added, a crystalline precipitate falls, which, when well washed upon a filter with solution of ammonia diluted with an equal volume of water, dried, and heated to redness, leaves 16·8 grains.

$Mg \cdot NH_4 \cdot PO_4$

Dose.—5 to 20 grains.

$$2NH_4OH + H_3PO_4 = (NH_4)_2HPO_4 + 2H_2O$$

AMYGDALA AMARA.

Bitter Almond.

N.O. Rosaceae

The ripe seed of the bitter almond tree, Prunus Amygdalus, *Stokes*, *var.* amara, *Baillon* (Amygdalus communis, *Linn. var.* amara, *DC.*) From Mogadore.

West Asia
naturalized
Mediterranean
basin.

Characters.—Resembles the sweet almond in appearance, but is distinguished by being broader and shorter, by its very bitter taste, and by its aqueous emulsion having an odour like that of ratafia or of peach-blossoms.

Yields by expression,

Oleum Amygdalæ 45 %

Also contains Mucilage 3% sugar 6% Proteids Tannin in testa. The unformed ferment (enzyme) is emulsin or synaptase. It is coagulated by heat. Bitter almonds also contain 1 to 3% amygdalin which splits up into glucose, HCN & benzaldehyd.

AMYGDALA DULCIS.

Sweet Almond.

The ripe seed of the sweet almond tree, Prunus Amygdalus, *Stokes, var.* dulcis, *Baillon* (Amygdalus communis, *Linn. var.* dulcis, *DC.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 99. Imported from Malaga, and known as the "Jordan almond."

Characters.—About an inch or somewhat more in length, nearly oblong in form, more or less compressed, pointed at one end and rounded at the other, and covered by a scurfy cinnamon-brown coat. It has a bland sweet nutty taste, and when triturated with water forms a white emulsion of an agreeable taste, but without any marked odour.

Preparations.

Mistura Amygdalæ
Oleum Amygdalæ yields 56 %
Pulvis Amygdalæ Compositus, 8 parts in 13

AMYL NITRIS.

Nitrite of Amyl.

A liquid produced by the action of nitric or nitrous acid on amylic alcohol which volatilises between 262° and 270° F. (or about 128° to 132° C.) It consists chiefly of nitrite of amyl, $C_5H_{11}NO_2$. It should be stored in hermetically-sealed vessels or in well-stoppered bottles, and in a cool dark place.

myl alcohol is dissolved in H_2SO_4 & the solution allowed to stand in ice for hrs. $NaNO_2$ is dissolved in a little water + also cooled then transferred a stoppered thistle funnel & the solution allowed to flow slowly into the ixture of alcohol & H_2SO_4 still surrounded by ice. The amyl nitrite ises to the surface leaving a semi-solid mass $NaHSO_4$. The liquid is canted & carefully distilled.

$$C_5H_{11}OH + H_2SO_4 = C_5H_{11}HSO_4 + H_2O.$$

$$C_5H_{11}HSO_4 + NaNO_2 = C_5H_{11}NO_2 + NaHSO_4$$

Characters and Tests.—An ethereal liquid of a yellowish colour, and peculiar, not disagreeable odour. Specific gravity about 0·880. Submitted to distillation, about 70 per cent. "passes over at 194° to 212° F. (90° to 100°C.), the bulb of the thermometer not dipping below the surface of the residual" fluid. Insoluble in water. Soluble in rectified spirit in all proportions. "If it be added drop by drop to fused caustic potash, valerianate of potassium will be formed."

Dose.—By inhalation, the vapour of 2 to 5 minims; but in mixtures to be swallowed, from ½ minim to 1 minim. To be used with caution.

$2\,KOH + C_5H_{11}NO_2 + O_2 = KC_5H_9O_2 + KNO_2 + 2\,H_2O$

AMYLUM.

Starch.

N.O. Graminaceae.

The starch procured from the grains of common wheat, Triticum sativum, *Lam.* (Triticum vulgare, *Villars*); maize, Zea Mays, *Linn.*; and rice, Oryza sativa, *Linn.*

Heated to 180°C. starch is converted into dextrin. Boiled with dilute H_2SO_4 starch is ∴ converted into dextrine + finally into glucose.

Characters and Tests.—In fine powder, or in irregular angular or columnar masses, which are readily reduced to powder; white, inodorous. When lightly rubbed in a mortar with a little cold distilled water, the mixture is neither acid nor alkaline to test-paper, and the filtered liquid does not become blue on the addition of solution of iodine. Mixed with boiling water and cooled, it gives a deep blue colour with iodine. Under the microscope these varieties of starch present the following characters:—1. Wheat starch: A mixture of large and small granules, which are lenticular in form, and marked with faint concentric striæ surrounding a nearly central hilum. 2. Maize starch: Granules more uniform in size, frequently polygonal, somewhat smaller than the large granules of wheat starch, and having a very distinct hilum but without evident concentric striæ. 3. Rice starch: Granules extremely minute, nearly uniform in size, polygonal, hilum small and without striæ.

With HNO_3 starch yields an explosive compound Xyloidine $C_{12}H_{16}(NO_2)_4$
Starch granules mainly consist of granulose (sol. in cold water) & starch cellulose (insol. in water). The starch cellulose forms an external coating on the granule. It is the granulose which gives the blue with iodine.

ago. Prepared by granulation with heat from Metroxylon Sagu + M. Rumphii. Palmaceae E. Indies.
apioca. Manihot utilissima M. Aipi Euphorbiaceae Brazil. The starch from the rhizome while still moist is dried on heated plates.

Preparations.

Glycerinum Amyli	1 part in 10 by weight
Mucilago Amyli	12 grains to 1 fluid ounce
Pulvis Tragacanthæ Compositus	1 part in 6
Suppositoria Acidi Tannici cum Sapone	
„ Morphinæ cum Sapone	

ANETHI FRUCTUS.

Dill Fruit. N.O. Umbelliferae

The dried fruit of Peucedanum graveolens, *Hiern.* (Anethum graveolens, *Linn.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 132. Levant + S. Europe.

Characters.—Broadly oval, about one-sixth of an inch long, flat, and surrounded by a broad membranous border. It has a brown colour, the membranous border being paler. The half-fruits or mericarps are usually distinct in the fruits of commerce. Odour and taste agreeably aromatic.

Preparations.

Aqua Anethi	1 pound to 1 gallon
Oleum Anethi	

P.C. 3 to 4 % Volatile Oil; fixed oil, mucilage.

ANISI FRUCTUS.

Anise Fruit. N.O. Umbelliferae.

The dried fruit of Pimpinella Anisum, *Linn.*; *Berg. und Schmidt*, t. 18 *d.* W. Asia, Egypt, S.E. Europe.

Characters.—Anise fruits, with the exception of the Russian variety, which is shorter, average about one-fifth of an inch in length; they are ovoid-oblong in form, of a greyish-brown colour, and their whole surface is covered with short hairs. Their two constituent mericarps are united and attached to a common stalk; and each mericarp is traversed by five pale slender entire ridges, and its transverse section

P.C. 1½ to 3% volatile oil 3 to 4 % fixed oil mucilage, sugar.

KING'S COLLEGE LONDON

exhibits about fifteen vittæ. They have an agreeable aromatic odour, and a sweetish spicy taste.

Preparations.

Aqua Anisi | Oleum Anisi

ANISI STELLATI FRUCTUS.

N.O. Magnoliaceae

Star-Anise Fruit.

The dried fruit of Illicium anisatum, *Linn.*; *Nees, Plant. Med.* plate 371. From plants cultivated in China.

Characters.—Star-anise fruit is usually composed of eight fully developed carpels diverging horizontally in a stellate manner from a short central generally stalked axis. Each carpel is boat-shaped, more or less beaked, irregularly wrinkled, of a rusty-brown colour, and commonly split on its upper margin so as to expose its solitary flattish smooth shining somewhat oblique reddish-brown seed. Odour and taste of both pericarp and seed closely resembling anise fruit.

Preparation.—Oleum Anisi.

P.C. Vol. Oil. capsules 5·3% seeds 1·8%). Fat (2·8% seeds 20%) saponin protocatechuic acid.

ANTHEMIDIS FLORES.

N.O. Compositae.

Chamomile Flowers.

The dried single and double flower-heads or capitula of Anthemis nobilis, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 154. From cultivated plants. S. & W. Europe.

Characters.—The single chamomile flowers of commerce are those in which the capitula have some yellow tubular florets in the centre, surrounded by a variable number of those which are white and ligulate; the double flowers are those in which all or nearly all the florets are white and ligulate. In both kinds the receptacle is solid, conical, and densely covered with chaffy scales; and both varieties, but especially the single, have a strong aromatic odour and very bitter taste.

Preparations.

Extractum Anthemidis	
Infusum Anthemidis	½ ounce to 10 fluid ounces
Oleum Anthemidis	

P.C. a bitter principle (anthemic acid) anthemene + Vol. Oil. 1%.

ANTIMONII OXIDUM.

Oxide of Antimony.

Sb_2O_3.

Take of

Solution of Chloride of Antimony	16 fluid ounces
Carbonate of Sodium	6 ounces
Water	2 gallons
Distilled Water	a sufficiency

Pour the antimonial solution into the water, mix thoroughly, let the precipitate settle, remove the supernatant liquid by a siphon, add one gallon of distilled water, agitate well, let the precipitate subside, again withdraw the fluid, and repeat the processes of affusion of distilled water, agitation, and subsidence. Add now the carbonate of sodium previously dissolved in two pints of distilled water, leave them in contact for half an hour, stirring frequently, collect the deposit on a calico filter, and wash with boiling distilled water until the washings cease to give a precipitate with a solution of nitrate of silver acidulated by nitric acid. Lastly, dry the product at a temperature not exceeding 212° F. (100° C.)

Characters and Tests.—A greyish-white powder, fusible at a low red heat, insoluble in water, but readily dissolved by hydrochloric acid. The solution, dropped into distilled water, gives a white deposit, at once changed to orange by sulphuretted hydrogen. "It dissolves entirely when boiled with an excess of the acid tartrate of potassium." absence of higher oxides

Dose.—1 to 4 grains.

$$12 SbCl_3 + 15 H_2O = (2 SbCl_3 + 5 Sb_2O_3) + 30 HCl$$

$$2 SbCl_3 \cdot 5 Sb_2O_3 + 3 Na_2CO_3 = 6 Sb_2O_3 + 6 NaCl + 3 CO_2.$$

Preparations for which Oxide of Antimony is used.

Antimonium Tartaratum	
Pulvis Antimonialis	1 part in 3

Preparations containing Antimony.

Antimonii Oxidum
Antimonium Nigrum Purificatum
,, Sulphuratum
,, Tartaratum
Liquor Antimonii Chloridi
Pilula Hydrargyri Subchloridi Composita
Pulvis Antimonialis
Unguentum Antimonii Tartarati
Vinum Antimoniale

ANTIMONIUM NIGRUM PURIFICATUM.

Purified Black Antimony.

Native sulphide of antimony, Sb_2S_3, purified from siliceous matter by fusion, reduced to fine powder, and, if, on testing as described below, any soluble salt of arsenium is present, purified by the following process.

Take of

Native Sulphide of Antimony, in fine powder	1 pound
Solution of Ammonia	8 fluid ounces
Distilled Water	a sufficiency

Macerate the sulphide of antimony with the solution of ammonia for five days, stirring frequently. Then allow the powder to subside, pour off the supernatant liquid, and thoroughly wash the residue with the water. Dry the powder by the aid of heat.

Characters and Tests.—A greyish-black crystalline powder. It dissolves almost entirely in boiling hydrochloric acid, evolving sulphuretted hydrogen, and the solution affords a

Absence of SiO_2

white precipitate when poured into water. If one grain be dissolved in hydrochloric acid, and the solution, slightly diluted, be gently warmed with a piece of bright copper foil, the copper being washed, dried, and heated in a dry narrow test-tube, no crystalline sublimate (of arsenious anhydride) should form on the upper cool part of the tube.

Preparations for which Purified Black Antimony is used.

Antimonium Sulphuratum
Liquor Antimonii Chloridi

ANTIMONIUM SULPHURATUM.

Sulphurated Antimony.

A mixture containing sulphide and oxide of antimony, Sb_2S_5 and Sb_2O_3.

Take of

Purified Black Antimony	. . .	10 ounces
Sublimed Sulphur	. . . .	10 ounces
Solution of Soda	. . . . .	$4\frac{1}{2}$ pints
Diluted Sulphuric Acid Distilled Water	} of each . .	a sufficiency

Mix the purified black antimony with the sublimed sulphur and the solution of soda, and boil for two hours with frequent stirring, adding distilled water occasionally to maintain the same volume. While still hot add nine pints of boiling distilled water. Strain the liquor through calico, and, before it cools, add to it by degrees the diluted sulphuric acid till the latter is in slight excess. Collect the precipitate on a calico filter, wash with distilled water till the washings no longer precipitate with chloride of barium, and dry at a temperature not exceeding 212° F. (100° C.)

Characters and Tests.—An orange-red powder, readily dissolved by caustic soda, also by hot hydrochloric acid with the evolution of sulphuretted hydrogen and the separation of sulphur. Sixty grains moistened and warmed with successive

$2\,Sb_2S_3 + S_2 + 6\,NaOH = 2\,Na_3SbS_4 + Sb_2O_3 + 3\,H_2O$

$Sb_2O_3 + 6\,NaOH = 2\,Na_3SbO_3 + 3\,H_2O.$

$Na_3SbS_4 + 2\,Na_3SbO_3 + 6\,H_2SO_4 = Sb_2S_5 + Sb_2O_3 + 6\,Na_2SO_4 + 3\,H_2O + 3\,H_2S.$

$2\,Sb_2S_3 + 6\,NaOH = 2\,Na_3SbS_3 + Sb_2O_3 + 3\,H_2O$

$Sb_2O_5 + 6\,NaOH = 2\,Na_3SbO_4 + 3\,H_2O.$

Ant. Sulphurat B.P. This is distinguished from pure sulphide by boiling with Pot: Acid. Tart or Acid Tart. Filter & test filtrate for Antimony. The oxide of antimony is dissolved out forming tartar emetic + sulphide of antimony is left insoluble.

portions of nitric acid until red fumes cease to be evolved, and then dried and heated to redness, gives a white residue weighing about 40 grains.

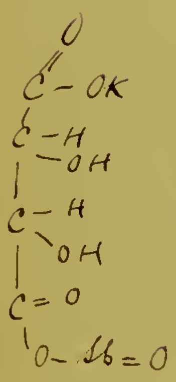
Dose.—1 to 5 grains.

Preparation.

Pilula Hydrargyri Subchloridi Composita . 1 part in 5

ANTIMONIUM TARTARATUM.

Tartarated Antimony.



Synonyms.—Antimonii Potassio-tartras; Antimonium Tartarizatum; Tartar Emetic.

$(KSbOC_4H_4O_6)_2H_2O.$

An oxytartrate of antimony and potassium.

Take of

Oxide of Antimony	5 ounces
Acid Tartrate of Potassium, in fine powder	6 ounces
Distilled Water	2 pints

Mix the oxide of antimony and acid tartrate of potassium with sufficient distilled water to form a paste, and set aside for twenty-four hours. Then add the remainder of the water, and boil for a quarter of an hour, stirring frequently. Filter, and set aside the clear filtrate to crystallise. Pour off the mother liquor, evaporate to one third, and set aside that more crystals may form. Dry the crystals on filtering paper at the temperature of the air.

Characters and Tests.—In colourless transparent crystals exhibiting triangular facets, soluble in water, and less so in proof spirit. It decrepitates and blackens upon the application of heat. Its solution in water gives with hydrochloric acid a white precipitate, soluble in excess, and which is not formed if tartaric acid be previously added. Twenty-nine grains dissolves slowly but without residue in a fluid ounce of distilled water at 60° F. (15°·5 C.), and the solution gives

$$Sb_2O_3 + 2KHC_4H_4O_6 = 2(KSbOC_4H_4O_6)\cdot H_2O$$

with sulphuretted hydrogen an orange precipitate which, when washed and dried at 212° F. (100° C.), weighs 15·1 grains.

Dose.—As a diaphoretic, $\frac{1}{16}$ to $\frac{1}{6}$ of a grain; as an emetic, 1 to 2 grains.

Preparations.

Unguentum Antimonii Tartarati .	1 part in 5
Vinum Antimoniale . . .	2 grains in 1 fluid ounce

APOMORPHINÆ HYDROCHLORAS.

Hydrochlorate of Apomorphine.

$C_{17}H_{17}NO_2,HCl.$

Synonym.—Apomorphiæ Hydrochloras.

The hydrochlorate of an alkaloid, obtained by heating morphine or codeine in sealed tubes with hydrochloric acid.

Characters and Tests.—Small, greyish-white, shining, acicular crystals, turning green on exposure to light and air, inodorous, with a very faint acid reaction on moistened litmus paper. Soluble in fifty parts of water and more soluble in alcohol, the solutions being decomposed with production of a green colour when they are boiled. From solutions, bicarbonate of sodium throws down a precipitate which becomes green on standing and then forms a purple solution with ether, violet with chloroform, and bluish-green with alcohol. With dilute solution of perchloride of iron it gives a deep red and with nitric acid a blood-red coloration.

Preparation.—Injectio Apomorphinæ Hypodermica.

AQUA.

Water.

Natural water, the purest that can be obtained, cleared, if necessary, by filtration; free from odour, Aqua. (Hydrolatum) Medicated waters are dilute solutions of aromatic substances (usually essential oils) in distilled water.

unusual taste, and visible impurity. To be used whenever 'Water' is ordered in the British Pharmacopœia In dispensing prescriptions, *aqua* should be understood to mean distilled water.

AQUA ANETHI.

Dill Water.

Take of

Dill Fruit, bruised	1 pound
Water	2 gallons

Distil one gallon.

AQUA ANISI.

Anise Water.

Take of

Anise Fruit, bruised	1 pound
Water	2 gallons

Distil one gallon.

AQUA AURANTII FLORIS.

Orange-flower Water.

The distilled water of the flowers of the Bitter Orange tree, Citrus vulgaris, *Risso* (Citrus Bigaradia, *Duhamel*), *Hist. Nat. des Orang.* plate 30; and of the Sweet Orange tree, Citrus Aurantium, *Risso*; *Bentl. and Trim. Med. Pl.* vol. i. plate 51.

Mostly prepared in France. Flowers of the Bitter Orange yield better water.

The Orange-flower Water of commerce is usually three times the strength of that employed in former years.

Characters and Test.—Colourless or with a slight greenish-yellow tint; odour very fragrant; taste bitter. Not coloured by sulphuretted hydrogen.

It is sometimes imported in copper & leaden vessels, & as the water generally contains acetic acid an oxide in the interior the vessel is liable to dissolved.

Preparation.—Syrupus Aurantii Floris.

Mist. Olei Ricini.

AQUA CAMPHORÆ.

Camphor Water.

Synonym.—Mistura Camphoræ.

Take of

Camphor, crushed	$\frac{1}{2}$ ounce
Distilled Water	1 gallon

Enclose the camphor in a muslin bag, and attach this to a piece of glass, by means of which it may be kept at the bottom of a bottle containing the distilled water. Close the mouth of the bottle, macerate for at least two days, and then pour off the solution when it is required. Contains $\frac{1}{4}$ gr in f ℥i Rather lighter S.G. than Aq. Dest.

Dose.—1 to 2 fluid ounces.

Preparations containing Camphor Water.

Injectio Apomorphinæ Hypodermica
,, Ergotini Hypodermica
Liquor Atropinæ Sulphatis

AQUA CARUI.

Caraway Water.

Take of

Caraway Fruit, bruised	1 pound
Water	2 gallons

Distil one gallon.

AQUA CHLOROFORMI. 1 in 200

Chloroform Water.

This does not keep HCl being formed after a time

Take of

Chloroform	1 fluid drachm
Distilled Water	25 fluid ounces

Put them into a two-pint stoppered bottle, and shake them together until the chloroform is entirely dissolved in the water.

Dose.—$\frac{1}{2}$ to 2 fluid ounces.

Contains a large proportion of essential oil which gives the water a turbid appearance. Deposits crystals of cinnamic acid on keeping due to oxidation of the Oil which consists largely of cinnamic aldehyde.

AQUA CINNAMOMI.

Cinnamon Water.

Take of

Cinnamon Bark, bruised . . .	20 ounces
Water	2 gallons

Distil one gallon.

Preparations containing Cinnamon Water.

Mistura Cretæ
„ Guaiaci
Mistura Spiritus Vini Gallici

The 1st ½ gall. contains any volatile impurities (Ammonia CO_2 etc. If it were evaporated to dryness the $MgCl_2$ contained in ordinary H_2O would be decomposed into oxide or oxychloride of Mg + HCl which latter would distil over & spoil the water $MgCl_2 + H_2O = MgO + 2HCl$.

AQUA DESTILLATA.

Distilled Water.

H_2O.

Take of

Water	10 gallons

By adding to every 5 galls. water 10 grs $KMnO_4$ + ʒi Ac. S. dil this ensures destruction of organic matter the products of which remain in the still.

Distil from a copper still, connected with a block-tin worm; reject the first half-gallon, and preserve the next eight gallons.

Tests.—A fluid ounce of it evaporated in a clean glass capsule leaves scarcely a visible residue. It is not affected by sulphuretted hydrogen, oxalate of ammonium, nitrate of silver, chloride of barium, solution of lime, or a mixture of starch mucilage and iodide of potassium slightly acidified by acetic acid. It gives only a faint yellow coloration when a solution of potassio-mercuric iodide is added to three or four ounces.

AQUA FŒNICULI.

Fennel Water.

Take of

Fennel Fruit, bruised	1 pound
Water	2 gallons

Distil one gallon.

rry laurel leaves contain a principle laurocerasin which under the influence of H_2O & a ferment allied to emulsin also present in the leaves is decomposed with production of HCN, benzoic aldehyde (oil of bitter almonds) & sugar. The benzoic dehyde + HCN distil over. It has been found that the proportion of HCN varies the season. Leaves gathered in winter or spring yielding far less than those thered in summer & autumn

AQUA LAUROCERASI.

Cherry-Laurel Water.

Take of

Fresh leaves of Cherry-Laurel . . .	1 pound
Water	2½ pints

Chop the leaves, crush them in a mortar, introduce them with the water into a retort, and distil one pint of liquid. Shake the product, filter through paper, and adjust the (1) strength of the finished product either by addition of hydrocyanic acid or by diluting the distillate with distilled water, so that 810 grains of it, tested as described in the process for diluted hydrocyanic acid, shall require 150 grain-measures of the volumetric solution of nitrate of silver to be added, before a permanent precipitate begins to form, which corresponds to 0·1 per cent. of real hydrocyanic acid.

(1) This shd not be done until the preparation has stood a week as it loses strength for the 1st few days after preparation after which a state is obtained when strength is nearly permanent

Dose.—½ to 2 fluid drachms.

1 c.c. $\frac{N}{10}$ $AgNO_3$ = ·0054 grm HCN

AQUA MENTHÆ PIPERITÆ.

Peppermint Water.

Take of

Oil of Peppermint	1½ fluid drachm
Water	1½ gallon

Distil one gallon.

About 1m in 553 or ½ min in a f℥i

Preparation.—Mistura Ferri Aromatica.

AQUA MENTHÆ VIRIDIS.

Spearmint Water.

Take of

Oil of Spearmint	1½ fluid drachm
Water	1½ gallon

Distil one gallon.

AQUA PIMENTÆ.

Pimento Water.

Take of

Pimento, bruised	14 ounces
Water	2 gallons

Distil one gallon.

AQUA ROSÆ.

Rose Water.

Take of

Fresh petals of the Hundred-leaved Rose, (or an equivalent quantity of the petals preserved while fresh with common salt)	10 pounds
Water	5 gallons

Distil one gallon.

Preparations for which Rose Water is used.

Mistura Ferri Composita | Trochisci Bismuthi

AQUA SAMBUCI.

Elder-flower Water.

Take of

Fresh Elder Flowers, separated from the stalks (or an equivalent quantity of the flowers preserved while fresh with common salt)	10 pounds
Water	5 gallons

Distil one gallon.

ARGENTI ET POTASSII NITRAS.

Nitrate of Silver and Potassium.

Synonym.—Mitigated Caustic.

Take of

Nitrate of Silver	1 ounce
Nitrate of Potassium	2 ounces

Fuse and mix thoroughly together in a capsule of platinum or thin porcelain, and pour the melted mass into proper moulds. Preserve in bottles carefully stoppered.

Characters and Tests.—White or greyish-white cylindrical rods or cones; freely soluble in distilled water, but only sparingly in rectified spirit. The aqueous solution gives with hydrochloric acid a curdy white precipitate which darkens by exposure to light; the filtrate from this mixture giving a yellow precipitate with perchloride of platinum, and evolving ruddy fumes when warmed with sulphuric acid and copper. Thirty grains dissolved in half an ounce of distilled water gives with hydrochloric acid a precipitate, which, when washed with hot distilled water and thoroughly dried, weighs 8·44 grains.

ARGENTI NITRAS.

Nitrate of Silver.

Synonym.—Lunar Caustic.

$AgNO_3$.

Take of

Refined Silver	3 ounces
Nitric Acid	$2\frac{1}{2}$ fluid ounces
Distilled Water	5 ounces

Add the nitric acid and the water to the silver in a flask, and apply a gentle heat till the metal is dissolved. Decant the clear liquor from any black powder which may be present, into a porcelain dish, evaporate, and set aside to crystallise; pour off the liquor, and again evaporate and crystallise. Let the crystals drain in a glass funnel, and dry them by exposure to the air, carefully avoiding the contact of all organic substances. To obtain the nitrate in rods, fuse the crystals in a capsule of platinum or thin porcelain, and pour the melted salt into proper moulds. Nitrate of silver must be preserved in bottles carefully stoppered.

Characters and Tests.—In colourless tabular crystals, the primary form of which is the right rhombic prism; or in

$3Ag_2 + 8HNO_3 = 6AgNO_3 + 2NO + 4H_2O$

or $2Ag_2 + 6HNO_3 = 4AgNO_3 + N_2O_3 + 3H_2O$

white cylindrical rods; soluble in distilled water, and in rectified spirit. The solution gives with hydrochloric acid a curdy white precipitate, which darkens by exposure to light, and is soluble in solution of ammonia. A small fragment heated on charcoal with the blowpipe first melts, and then deflagrates, leaving behind a dull white metallic coating. Ten grains dissolved in two fluid drachms of distilled water, gives with hydrochloric acid a precipitate, which, when washed with hot distilled water and thoroughly dried, weighs 8·44 grains. The filtrate when evaporated by a water-bath leaves no residue.

Dose.—$\frac{1}{6}$ to $\frac{1}{3}$ grain.

To form Toughened Nitrate of Silver or 'Toughened Caustic,' add 5 parts of nitrate of potassium to 95 parts of the nitrate of silver before fusion. 10 grains of this preparation will yield with hydrochloric acid 8 grains of precipitate, and the filtrate when evaporated will leave a white residue.

Preparations for which Nitrate of Silver is used.

Argenti et Potassii Nitras | Argenti Oxidum

ARGENTI OXIDUM.

Oxide of Silver.

Ag_2O.

Take of

Nitrate of Silver, in crystals . .	$\frac{1}{2}$ ounce
Solution of Lime	$3\frac{1}{2}$ pints
Distilled Water	10 fluid ounces

Dissolve the nitrate of silver in four ounces of the distilled water, and, having poured the solution into a bottle containing the solution of lime, shake the mixture well, and set it aside to allow the deposit to settle. Draw off the supernatant liquid, collect the deposit on a filter, wash it with the remainder of the distilled water, and dry it at a temperature not exceeding 212° F. (100° C.) Keep it in a stoppered bottle.

Characters and Tests.—An olive-brown powder, which at a low red heat gives off oxygen, and is reduced to the metallic

$2AgNO_3 + Ca(OH)_2 = Ag_2O + CaNO_3 + H_2O.$

state. It dissolves completely in nitric acid without the evolution of any gas, forming a solution which has the characters of nitrate of silver. Twenty-nine grains heated to redness leaves 27 grains of metallic silver.

Dose.—½ to 2 grains.

ARGENTUM PURIFICATUM.

Refined Silver.

Pure metallic silver.

Test.—If ammonia be added in excess to a solution of the metal in nitric acid, the resulting fluid exhibits neither colour nor turbidity. Ten grains dissolved in a little nitric acid, the solution diluted with water, and diluted hydrochloric acid added in slight excess, yields a white precipitate, which, when thoroughly washed, dried, and heated, weighs 13·25 grains.

absence of copper.

Preparation.—Argenti Nitras.

ARMORACIÆ RADIX.

Horseradish Root.

N.O. Cruciferae.

The fresh root of Cochlearia Armoracia, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 21. From plants cultivated in Britain, and most active in the autumn and early spring before the leaves have appeared. Hab E. Europe

Characters.—Nearly cylindrical, except at the upper end, where it is enlarged and conical, and marked in an annulated manner by the scars of fallen leaves. It is from half an inch to about an inch in diameter, and commonly a foot or more in length; pale yellowish-white or brownish-white externally, whitish and fleshy within. Taste very pungent, but inodorous except when scraped or bruised, when it exhales a characteristic pungent odour.

Preparation.—Spiritus Armoraciæ Compositus.

P.C. Yields a Vol: Oil (·05% not preexisting in the root) of same composition as oil of mustard C_3H_5NCS.

ARNICÆ RHIZOMA.

Arnica Rhizome.

N.O. Compositae.

Synonym.—Arnicæ Radix.

The dried rhizome and rootlets of Arnica montana, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 158.

Hab. Europe, N. Asia, N.W. America in mountainous localities.

Characters.—Rhizome cylindrical, dark brown, from one to two inches or more in length, and from about a sixth to a quarter of an inch in diameter, contorted, rough from the scars of fallen leaves, some remains of which are usually to be found at its upper end, and giving off from its under surface numerous dark brown filiform wiry rootlets. Odour peculiar and somewhat aromatic; taste acrid and bitterish.

Preparation.—Tinctura Arnicæ, 1 ounce to 1 pint.

C.c. ½–1 % Volatile Oil Acrid resins (arnicin etc.
10 % inulin tannin

ARSENII IODIDUM.

Iodide of Arsenium.

Synonyms.—Iodide of Arsenic; Arsenious Iodide.

AsI_3.

Obtained by the direct combination of iodine and metallic arsenium or by evaporating to dryness an aqueous mixture of arsenious and hydriodic acids.

Characters and Tests.—Small orange-coloured crystals, readily and almost entirely soluble in water and in rectified spirit. Its aqueous solution has a neutral reaction, and gives a yellow precipitate with sulphuretted hydrogen. Heated in a test-tube it almost entirely volatilises, violet vapours of iodine being set free.

Dose.—$\frac{1}{30}$ of a grain.

Preparation.—Liquor Arsenii et Hydrargyri Iodidi: about 1 grain in 100.

ASAFŒTIDA.

Asafœtida. N. O. Umbelliferae

A gum-resin obtained by incision from the living root of Ferula Narthex, *Boiss.* (Narthex Asafœtida, *Falconer*); W. Thibet + probably Cashmir *Edinb. Roy. Soc. Trans.* vol. xxii. plates 20, 21; and of Ferula Scorodosma, *Benth. and Hook. fil.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 127; and probably other species. Ferula foetida + F. Asafoetida Persia, Turkestan + Afghanistan.

Characters and Tests.—Rarely in tears; usually in irregular masses varying in consistence and size, and composed of tears agglutinated together by darker-coloured and softer material. When broken or cut, the exposed surface has an amygdaloid appearance, the fractured tears being opaque and milk-white at first, but changing gradually to purplish-pink or reddish-pink, and finally to dull yellowish-brown. Taste bitter, acrid, and alliaceous; odour strong, alliaceous, and persistent. When triturated with water it forms a white emulsion. The freshly fractured surface of a tear when touched with nitric acid assumes for a short time a fine green colour. It should yield not more than 10 per cent. of ash. 50 to 60 per cent. should be soluble in rectified spirit. P. J. Vol: Vii 3 to 6 or 9% gum 20 to 30% Resin 50 to 70% Ash 3 to 4%. In dry distillation the resin yields Umbelliferon + fused with Potash gives resorcin & pyrocatechuic acid

Dose.—5 to 20 grains.

Preparations.

Enema Asafœtidæ . .	30 grains to 4 fluid ounces
Pilula Aloes et Asafœtidæ .	1 part in 4
,, Asafœtidæ Composita.	1 part in $3\frac{1}{2}$
Spiritus Ammoniæ Fœtidus.	33 grains to 1 fluid ounce
Tinctura Asafœtidæ . .	$54\frac{1}{2}$ grains to 1 fluid ounce

ATROPINA.

Atropine. Isomeric with Hyoscyamine.

Synonym.—Atropia.

$C_{17}H_{23}NO_3$.

An alkaloid obtained from Belladonna.

Take of

Belladonna Root, recently dried, and in coarse powder	2 pounds
Rectified Spirit	10 pints
Slaked Lime	1 ounce
Diluted Sulphuric Acid Carbonate of Potassium	of each a sufficiency
Chloroform	3 fluid ounces
Purified Animal Charcoal	a sufficiency
Distilled Water	10 fluid ounces

Macerate the root in four pints of the spirit, for twenty-four hours, with frequent stirring. Transfer to a displacement apparatus, and exhaust the root with the remainder of the spirit by slow percolation. Add the lime to the tincture placed in a bottle, and shake them occasionally several times. Filter, add the diluted sulphuric acid in very slight excess to the filtrate, and filter again. Distil off three-fourths of the spirit, add to the residue the distilled water, evaporate as rapidly as possible, until the liquor is reduced to one-third of its volume and no longer smells of alcohol; then let it cool. Add very cautiously, with constant stirring, a solution of the carbonate of potassium so as nearly to neutralise the acid, care, however, being taken that an excess is not used. Set to rest for six hours, then filter, and add carbonate of potassium in such quantity that the liquid shall acquire a decided alkaline reaction. Place it in a bottle with the chloroform; mix well by frequently repeated brisk agitation, and pour the mixed liquids into a funnel furnished with a glass stopcock. When the chloroform has subsided, draw it off by the stopcock, and distil it on a water-bath from a retort connected with a condenser. Dissolve the residue in warm rectified spirit; digest the solution with a little animal charcoal; filter, evaporate, and cool until colourless crystals are obtained.

Characters and Tests.—In colourless acicular crystals, sparingly soluble in water, more readily in alcohol and in ether. Its solution in water has an alkaline reaction, gives a citron-yellow precipitate with perchloride of gold, has a bitter taste, and powerfully dilates the pupil. It leaves no ash when burned with free access of air. It is an active poison.

Preparations.

Atropinæ Sulphas	
Unguentum Atropinæ	8 grains to 1 ounce

ATROPINÆ SULPHAS.

Sulphate of Atropine.

Synonyms.—Atropiæ Sulphas; Sulphate of Atropia.

Take of

Atropine	120 grains
Distilled Water	4 fluid drachms
Diluted Sulphuric Acid	a sufficiency

Mix the atropine with the water and add the acid gradually, stirring them together until the alkaloid is dissolved and the solution is neutral. Evaporate it to dryness at a temperature not exceeding 100° F. (37°·8 C.)

Characters and Tests.—Nearly colourless, crystalline or pulverulent, soluble in water, forming a solution which is neutral to test-paper, and when applied to the eye dilates the pupil. It leaves no ash when burned with free access of air.

Intended for external application. It is a powerful poison.

Preparation.

Liquor Atropinæ Sulphatis	about 1 grain in 100 fl. grains
Lamellæ Atropinæ	

AURANTII CORTEX.

Bitter-Orange Peel.

Synonym.—Aurantii Pericarpium. N. O. Rutaceae.

The dried outer part of the rind or pericarp of Citrus vulgaris, *Risso* (Citrus Bigaradia, *Duhamel*). Hab. N. India cultivated in subtropical countries

P. co. Vo: Oil, + Hesperidin.

r 2

Characters.—In thin pieces, or in curled bands or strips, glandular and of a deep orange-red colour externally, and white within from a portion of the inner spongy part of the rind not having been removed. It has an aromatic bitter taste, and pleasant aromatic odour.

Preparations.

Infusum Aurantii . . .	1 ounce to 1 pint
,, ,, Compositum .	½ ounce to 1 pint
,, Gentianæ Compositum .	110 grains to 1 pint
Spiritus Armoraciæ Compositus .	2½ ounces to 1 pint
Tinctura Aurantii . . .	2 ounces to 1 pint
,, Cinchonæ Composita .	1 ounce to 1 pint
,, Gentianæ Composita .	¾ ounce to 1 pint

AURANTII FRUCTUS.

Bitter Orange.

The ripe fruit of Citrus vulgaris, *Risso* (Citrus Bigaradia, *Duhamel*), *Hist. Nat. des Orang.* plate 30.

Characters.—Globular except at the two ends, where it is somewhat compressed; about the size of the sweet orange, but the pericarp is rougher, darker in colour, being deep orange-red or red, the pulp very bitter and sour, and the rind more aromatic and very bitter.

Preparations.

Tinctura Aurantii Recentis | Vinum Aurantii

BALSAMUM PERUVIANUM.

N.O. Leguminosae

Balsam of Peru.

A balsam exuded from the trunk of Myroxylon Pereiræ, *Klotzsch* (Toluifera Balsamum, var. *Baill.*); *Bentl. and Trim. Med. Pl.* vol. ii plate 83, after the bark has been beaten, scorched, and removed.

Central America

Characters and Tests.—A liquid somewhat less viscid than treacle, appearing nearly black in bulk, but in thin layers deep orange-brown or reddish-brown and transparent. Its odour is agreeably balsamic, more especially when heated; and when swallowed it leaves a disagreeable burning sensation in the throat. It is insoluble in water, but soluble in chloroform or rectified spirit. Specific gravity between 1·137 and 1·150. Ten drops triturated with six grains of slaked lime produces a permanently soft mixture; and the mixture, on being warmed until all volatile matter is given off and until charring commences, gives no fatty odour. Absence of fixed oils It should not diminish in volume when shaken with an equal bulk of water. absence of alcohol.

Dose.—10 to 15 minims. P.C. 60% Cinnamein, Resin 32%
On dry distillation the resin yields
Cinnamic acid, styrol styracin & benzoic acid

BALSAMUM TOLUTANUM.

Balsam of Tolu. N.O. Leguminosae

A balsam which exudes from the trunk of Myroxylon Toluifera, *H. B. and K.* (Toluifera Balsamum, *Mill.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 84, after incisions have been made in the bark. Venezuela + New Granada

Characters.—When first imported it is a soft and tenacious solid, but it becomes harder by keeping, and then, in cold weather, is brittle like resin. In thin films it is transparent and of a yellowish-brown colour; and when pressed between pieces of glass with the aid of heat, and then examined with a lens, it exhibits an abundance of crystals of cinnamic acid. Odour highly fragrant, especially when warmed; taste somewhat aromatic and slightly acid. It is soluble in rectified spirit, and the solution has an acid reaction.

Dose.—10 to 20 grains. P.C. Resins, Cinnamic + benzoic acids

Preparations.

Pilula Phosphori . . .	4 parts in 9
Syrupus Tolutanus . . .	$1\frac{1}{4}$ ounce to 3 pounds
Tinctura Benzoini Composita .	11 grains to 1 fluid ounce
Tinctura Tolutana . . .	$54\frac{1}{2}$ grains to 1 fluid ounce

For dispensing, rub down in a mortar & add the water with constant stirring so as to prevent it forming an adhesive mass on the pestle.

BEBERINÆ SULPHAS.

Sulphate of Beberine.

Synonym.—Beberiæ Sulphas.

It is slow of solubility & if agitated gives rise to great frothiness.

A few drops of dil. Sulph. Acid aids solution

Prepared from Nectandra or Bebeeru bark. It is probably a mixture of sulphates of beberine, $C_{36}H_{42}N_2O_6$, nectandrine, $C_{40}H_{46}N_2O_8$, and other alkaloids. It may be obtained by the following process:—

Take of

Bebeeru Bark, in coarse powder	1 pound
Sulphuric Acid . . .	½ fluid ounce
Slaked Lime	¾ ounce, or a sufficiency
Solution of Ammonia . .	a sufficiency
Rectified Spirit . . .	16 fluid ounces, or a sufficiency
Diluted Sulphuric Acid . .	a sufficiency
Water	1 gallon
Distilled Water . . .	a sufficiency

Add the sulphuric acid to the water; pour upon the bebeeru bark enough of this mixture to moisten it thoroughly; let it macerate for twenty-four hours; place it in a percolator, and pass through it the remainder of the acidulated water. Concentrate the acid liquor to the bulk of one pint, cool, and add gradually the lime in the form of milk of lime, agitating well and taking care that the fluid still retains a distinct acid reaction. Let it rest for two hours; filter through calico; wash the precipitate with a little cold distilled water, and to the filtrate add solution of ammonia until the fluid has a faint ammoniacal odour. Collect the precipitate on a cloth, wash it twice with ten ounces of cold water, squeeze it gently with the hand, and dry it by the heat of a water-bath. Pulverise the dry precipitate, put it into a flask with six ounces of the rectified spirit, boil, let it rest for a few minutes, and pour off the spirit. Treat the undissolved portion in a similar manner with fresh spirit until it is exhausted. Unite the spirituous solutions, add to them four ounces of distilled water, and distil so as to recover the greater part of the spirit. To the residue of the distillation add by degrees, and with constant stirring, diluted sulphuric acid till the fluid has a slight acid reaction. Evaporate the whole to complete dryness on the water-bath, pulverise the dry product, pour on it gradually one pint of cold distilled water, stirring diligently; filter through paper; evaporate the filtrate to the consistence of syrup, spread it in thin layers on flat porcelain or glass plates, and dry it at a temperature not exceeding 140° F. (60° C.) Preserve the product in stoppered bottles.

Characters and Tests.—In dark-brown thin translucent scales, yellow when in powder, with a strong bitter taste, soluble in water, yielding a clear brown solution, and in alcohol. Its watery solution gives a white precipitate with chloride of barium; and with caustic soda a yellowish-white precipitate, which is dissolved by agitating the mixture with twice its volume of ether. The ethereal solution, separated by a pipette and evaporated, leaves a yellow translucent residue, entirely soluble in dilute acids. Ignited with free access of air it burns without residue.

Dose.—1 to 10 grains.

BELÆ FRUCTUS.

Bael Fruit.

N.O. Rutaceæ.

The dried half-ripe fruit of Ægle Marmelos, *Correa*; *Bentl. and Trim. Med. Pl.* vol. i. plate 55. Himalayas; cultivated in India.

Characters.—Fruit roundish, about the size of a large orange, with a hard woody nearly smooth rind; usually imported in dried more or less twisted slices, or in fragments consisting of portions of the rind and adherent dried pulp and seeds. Rind about one-eighth of an inch thick, hard, and covered with a nearly smooth pale brown or greyish firmly adherent epicarp; the pulp firm and brittle, and of an orange-brown or cherry-red colour externally, but when broken it is seen to be nearly colourless internally. It has no odour, and its taste is simply mucilaginous and very slightly acid.

Preparation.

Extractum Belæ Liquidum . 1 ounce to 1 fluid ounce

P.C. Mucilage, Pectin, Sugar, traces of Tannin
Bitter principle.

BELLADONNÆ FOLIA.

N.O. Solanaceae

Belladonna Leaves.

The fresh leaves, with the branches to which they are attached, of Atropa Belladonna, *Linn.*; also the leaves separated from the branches and carefully dried; gathered, when the fruit has begun to form, from plants growing wild or cultivated in Britain. *Bentl. and Trim. Med. Pl.* vol. iii. plate 193. Europe + Asia Minor

Characters and Test.—Leaves alternate below, in pairs above of unequal size, all shortly stalked, from three to eight inches long, broadly ovate, acute, entire, smooth. The expressed juice of the fresh leaves, or an infusion of the dried leaves, dropped into the eye, dilates the pupil.

Preparations.

Extractum Belladonnæ .	about 4 parts from 100
Succus Belladonnæ	
Tinctura Belladonnæ . .	1 ounce to 1 pint

P.C. ·5% alkaloids (hyoscyamine converted into atropine in pro
of extraction) Albumin Asparagin.

BELLADONNÆ RADIX.

Belladonna Root.

The root of Atropa Belladonna, *Linn.*, from plants growing wild or cultivated in Britain, and carefully dried; or imported in a dried state from Germany.

Characters and Test.—In rough irregular branched pieces, from one to two feet long and from half an inch to two or more inches thick, generally marked at their upper end by the hollow bases of the stems which they once bore. The root is

P.C. Atropine ·2 to ·6% Alkaloids are chiefly
found in the [illegible].

covered with a dirty grey or brownish integument, which is easily scraped off by the nail, when the exposed surface presents a whitish appearance. It breaks readily with a short fracture, and the surface is then seen to consist of a thin cortical portion of a yellowish or pale brown colour, separated by a dark line from a large central portion of a brownish colour, and marked throughout by scattered darker-coloured dots. The root-branches without evident medullary rays. An infusion dropped into the eye dilates the pupil.

Preparations.

Atropina	
Linimentum Belladonnæ .	1 ounce to 1½ fluid ounce
Extractum Belladonnæ Alcoholicum.	

BENZOINUM.

Benzoin. N.O. Styraceæ.

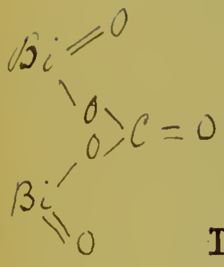
A balsamic resin obtained from Styrax Benzoin, *Dry.*; *Phil. Trans.* vol. lxxvii. plate 12; and probably from one or more other species of Styrax, *Linn.* It is generally procured by making deep incisions in the bark of the trees, and allowing the liquid that exudes to concrete by exposure to the air. Sumatra Java Siam

Characters.—In masses composed of loosely agglutinated tears, or more generally the tears are closely compacted together by a deep amber-brown, reddish-brown, or greyish-brown, translucent substance. In some specimens the tears are an inch or more in length, and when first broken they have an opaque milk-white appearance, so that the masses then present an almond-like character; while in others the white substance is very small in amount, and the masses when broken resemble reddish-brown granite. Benzoin is very brittle, softens readily by the warmth of the mouth; gives off, when heated, fumes of benzoic acid; has very little taste, but an agreeable balsamic odour resembling vanilla, or, in some cases, storax. It is soluble in rectified spirit and in solution of potash.

P.C. Benzoic acid ·2-20 or 24 %. Cinnamic acid several resins Pyrocatechin proto-uric acid Vanillin.

Preparations.

Acidum Benzoicum	
Adeps Benzoatus . . .	1 part to 50
Tinctura Benzoini Composita	44 grains to 1 fluid ounce
Unguentum Cetacei	



BISMUTHI CARBONAS.

Carbonate of Bismuth.

Synonym.—Oxycarbonate of Bismuth.

$(Bi_2O_2CO_3)_2,H_2O$.

Take of

Purified Bismuth, in small pieces .	2 ounces
Nitric Acid	4 fluid ounces
Carbonate of Ammonium . .	6 ounces
Distilled Water	a sufficiency

Na_2CO_3 would give a more basic carbonate.

Mix the nitric acid with three ounces of distilled water and add the bismuth in successive portions. When effervescence has ceased, apply for ten minutes a temperature approaching that of ebullition, and afterwards decant the solution from any insoluble matter that may be present. Evaporate the solution until it is reduced to two fluid ounces, and add this in small quantities at a time to a cold filtered solution of the carbonate of ammonium in two pints of distilled water, continually stirring during admixture. Collect the precipitate on a calico filter and wash it with distilled water until the washings pass tasteless. Remove now as much of the adhering water as can be separated from the precipitate by slight pressure with the hands, and finally dry the product at a temperature not exceeding 150° F. (65°·5 C.) 2, retain a molecu of H_2O.

Characters and Tests.—A white powder, blackened by sulphuretted hydrogen; insoluble in water, but soluble with effervescence in nitric acid. When added to sulphuric acid coloured with sulphate of indigo, the colour of the latter is not discharged unless a relatively very minute proportion of the indigo solution be used. If to nitric acid mixed with half its volume of distilled water as much carbonate of

Absence of Nitrates

$$Bi_2 + 8HNO_3 = 2 Bi(NO_3)_3 + 2 NO + 4 H_2O.$$

$$2 Bi(NO_3)_3 + 2 N_3H_{11}C_2O_5 + 2 H_2O = Bi_2O_2CO_3, H_2O + 6NH_4NO_3 + 3$$

bismuth be added as the acid will dissolve, one volume of this solution poured into twenty volumes of water will yield a white precipitate. The nitric acid solution gives no precipitate with solution of nitrate of silver, or becomes only slightly turbid, and stands the tests for impurities described in connection with 'Purified Bismuth.'

Dose.—5 to 20 grains.

BISMUTHI CITRAS.

Citrate of Bismuth.

$BiC_6H_5O_7$.

Take of

Subnitrate of Bismuth	5½ ounces
Nitric Acid	11 fluid ounces or a sufficiency
Citric Acid	4 ounces
Bicarbonate of Sodium	8 ounces
Distilled Water	a sufficiency

Heat the subnitrate of bismuth with the nitric acid until the salt is dissolved. Pour in some water, with constant stirring, until the cloudiness produced by the water no longer rapidly disappears. Dissolve the bicarbonate of sodium in distilled water, add the citric acid, boil until all gas is expelled, and then add the liquid to the clear or only faintly opalescent solution of bismuth until no further precipitate is produced. Heat to boiling, occasionally stirring. Set the whole aside to cool. When cold, filter, and wash the precipitate of citrate of bismuth until no free nitric acid remains. Dry the product over a water-bath.

Characters and Tests.—A white powder usually containing two and a half per cent. of absorbed moisture; soluble in solution of ammonia to a clear or nearly clear liquid. The latter solution yields a black precipitate with sulphuretted hydrogen, less the gas. and the filtrate from this precipitate, after it has been boiled until free from ammonia, and then filtered, gives a white precipitate when warmed with lime water; the filtrate also

$Bi\,3NO_3 + Na_3C_6H_5O_7 = BiC_6H_5O_7 + 3\,NaNO_3$

affords no black colour round a crystal of sulphate of iron added together with an equal bulk of sulphuric acid. On strongly heating citrate of bismuth it chars, and on ignition yields a residue for the most part black but with a yellow surface, soluble in a little nitric acid. The latter solution, on being dropped into water, affords a white precipitate; and when the solution is treated in the manner described under 'Purified Bismuth' it should stand the tests for impurities there indicated. Ten grains dissolved in solution of ammonia and treated with sulphuretted hydrogen in excess yields a precipitate which, when washed and dried, weighs about seven grains.

Dose.—2 to 5 grains.

Preparation.—Liquor Bismuthi et Ammonii Citratis.

BISMUTHI ET AMMONII CITRAS.

Citrate of Bismuth and Ammonium.

Take of

Solution of Citrate of Bismuth and Ammonium . . .	1 pint, or a sufficiency

Evaporate the solution over a water-bath to the consistence of a syrup. Spread the resulting fluid in thin layers on glass or porcelain plates, and dry at a temperature not exceeding 100° F. (37°·8 C.) Remove the scales, and preserve them in a stoppered bottle.

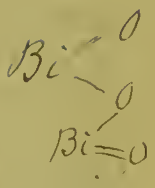
Characters and Tests.—Small, shining, translucent scales, having a slightly metallic taste, very soluble in water, yielding ammonia when warmed with solution of a fixed alkali. On ignition, the salt chars and yields a residue for the most part black but with a yellow surface, soluble in a little nitric acid. The latter solution should stand the tests for impurities described in connection with 'Purified Bismuth.' Ten grains dissolved in water and treated with sulphuretted hydrogen in excess yields a precipitate which, when washed and dried, weighs about six and a half grains.

Dose.—2 to 5 grains.

BISMUTHI OXIDUM.

Oxide of Bismuth.

Bi_2O_3.



Take of

Subnitrate of Bismuth	1 pound
Solution of Soda	4 pints

Mix and boil for five minutes; then, having allowed the mixture to cool and the oxide to subside, decant the supernatant liquid, wash the precipitate thoroughly with distilled water, and finally dry the oxide by the heat of a water-bath.

Characters and Tests.—A dull lemon-yellow powder. Heated to incipient redness it is scarcely diminished in weight. It is insoluble in water, but soluble in nitric acid mixed with half its volume of water, and if it be thus dissolved to saturation, the solution mixed with ten or twenty times its volume of water yields a white precipitate. The nitric acid solution gives no precipitate with solution of nitrate of silver, or becomes only slightly turbid, and it stands the tests for impurities described in connection with 'Purified Bismuth.'

Absence of moisture or Bis. Carb.

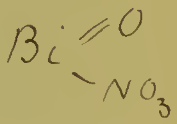
Dose.—5 to 15 grains.

$2BiONO_3 \cdot H_2O + 2NaHO = Bi_2O_3 + 2NaNO_3 + 3H_2O.$

BISMUTHI SUBNITRAS.

Subnitrate of Bismuth.

$BiONO_3,H_2O$.



Synonym.—Oxynitrate of Bismuth.

Take of

Purified Bismuth, in small pieces .	2 ounces
Nitric Acid	4 fluid ounces
Distilled Water	a sufficiency

Mix the nitric acid with three ounces of distilled water, and add the bismuth in successive portions. When effervescence

$Bi\,3NO_3 + 2H_2O = BiONO_3 \cdot H_2O + 2HNO_3$.
Some Bi remains in solution.
$5Bi\,3NO_3 + 8H_2O = 4BiONO_3 \cdot H_2O + Bi\,3NO_3 \cdot 8HNO_3$

has ceased, apply for ten minutes a temperature approaching that of ebullition, and decant the solution from any insoluble matter that may be present. Evaporate the solution until it is reduced to two fluid ounces, and pour it into half a gallon of distilled water. When the precipitate which forms has subsided, decant the supernatant liquid, add half a gallon of distilled water to the precipitate, stir them well together, and after two hours decant off the liquid, collect the precipitate on a calico filter, enfold it with the calico and press it with the hands, and dry it at a temperature not exceeding 150° F. (65°·5 C.)

a higher temp would drive off the water.

Characters and Tests.—A heavy white powder in minute crystalline scales, blackened by sulphuretted hydrogen; insoluble in water, but soluble without effervescence in nitric acid mixed with half its volume of distilled water, forming a solution which poured into water gives a white precipitate. It forms with sulphuric acid diluted with an equal bulk of water a solution which is blackened by sulphate of iron. The nitric acid solution gives only a faint opalescence with a very small proportion of hydrochloric acid, with solution of nitrate of silver remains clear or becomes only slightly turbid, and stands the tests for impurities described in connection with 'Purified Bismuth.' If ten grains be dissolved in nitric acid and the fluid be mixed with a solution of about twenty grains of citric acid and sufficient ammonia to give decided alkalinity, the mixture then being boiled while still kept faintly alkaline, no precipitate or opalescence is observable.

absence of $Ca_3 2PO_4$

Dose.—5 to 20 grains.

Preparation.—Trochisci Bismuthi, 2 grains in each lozenge.

Melting 264°C + expands on cooling.

BISMUTHUM.

Bismuth.

Found in metallic state as Bi glance; + also asso with Pb Cu &c.

A crystalline metal. In its crude state it is impure.

Preparation.—Bismuthum Purificatum.

The ore is first heated to expel any admixed S. + is then mel with C + metallic Fe, to remove last trace of S) [illegible] slag in cont The Bi is separated from the slag, which is mixed with an impure speiss produced from the accompanying metals (Co Ni) + is again heated on an inclined iron plate. The [illegible] Bi flows away + is partially purified by [illegible] with KNO_3.

The object in this process is to convert the Pb + Cu into sulphides. The 2nd flux oxidising these into sulphates. The KCN prevents oxidation of the Bi + takes out Au + Ag as double cyanides.

BISMUTHUM PURIFICATUM.

Purified Bismuth.

Take of

Bismuth	10 ounces
Cyanide of Potassium	$\frac{1}{2}$ ounce
Sulphur	80 grains
Carbonate of Potassium, recently ignited Carbonate of Sodium, recently ignited .	of each a sufficiency

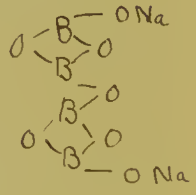
Melt the bismuth in a crucible. Add the cyanide of potassium and sulphur, previously mixed. Heat the whole to low redness for about fifteen minutes, constantly stirring. Remove the crucible from the fire, and let it cool until the flux has solidified to a crust. Pierce two holes in the crust, and pour the still fluid bismuth into another crucible. Remelt this partially purified bismuth with about five per cent. of a mixture of equal parts of the dried carbonates of potassium and sodium, heating to bright redness and constantly stirring. Remove the crucible from the fire, cool, and pour out the bismuth into suitable moulds.

Characters and Tests.—A crystalline metal of a greyish-white colour, with a distinct roseate tinge. Specific gravity 9·83. Dissolved in a mixture of equal volumes of nitric acid and distilled water, it forms a solution which by evaporation yields colourless crystals that are decomposed on the addition of water, giving a white precipitate. If the mother liquor from which the crystals have been separated be evaporated with hydrochloric acid until all the nitric acid is dissipated, a little of the product yields no evidence of arsenium on being examined by the hydrogen test commonly known as Marsh's Test; no blue coloration on adding water and excess of ammonia, and no precipitate on filtering and saturating the ammoniacal filtrate with nitric acid; Absence of Ag no white precipitate with diluted sulphuric acid; Absence of Pb no red or black precipitate with sulphite of sodium; Absence of Fe or Cu and no blue precipitate with ferrocyanide of potassium. Absence of Fe.

Preparations containing Bismuth.

Bismuthi Carbonas
„ Citras
„ et Ammonii Citras
„ Oxidum
Bismuthi Subnitras
Liquor Bismuthi et Ammonii Citratis
Trochisci Bismuthi

When Borax is heated with metallic salts it does not form Borates, but metaborates



BORAX.

Borax.

Synonyms.—Sodæ Biboras; Pyroborate of Sodium.

$2NaBO_2 \cdot B_2O_3$ $Na_2B_4O_7,10H_2O$.

Purified by fractional crystallisation

A native salt. It is also made artificially by boiling together, in proper proportions, boric acid and carbonate of sodium. $4H_3BO_3 + Na_2CO_3 + 4H_2O = Na_2B_4O_7 \cdot 10H_2O + CO_2$

Characters and Tests.—In transparent colourless crystals, sometimes slightly effloresced, with a weak alkaline reaction; insoluble in rectified spirit, soluble in water. A hot saturated solution, when acidulated with any of the mineral acids, lets fall, as it cools, a scaly crystalline deposit (boric acid), the solution of which in spirit burns with a green flame. 191 grains dissolved in ten fluid ounces of distilled water requires for saturation 1000 grain-measures of the volumetric solution of oxalic acid.

Dose.—5 to 40 grains.

Preparations.

Glycerinum Boracis . .	1 part in 8 by weight
Mel Boracis	46 grains in 1 ounce

Preparation for which Borax is used.—Acidum Boricum.

BROMUM.

Bromine.

A liquid non-metallic element, obtained from sea-water and from some saline springs.

Characters and Tests.—A dark brownish-red, very volatile liquid, with a strong and disagreeable odour. Its specific gravity is 2·97 to 3·14. At the common temperature of the air it gives off red vapours, and at a temperature of 135° to 145° F. (57°·2 to 62°·8 C.) it boils. Agitated with solution of soda in such proportion that the fluid remains very slightly alkaline, it forms a colourless liquid, which, if coloured by the further addition of a small quantity of the bromine, does not become blue on the subsequent addition of a cold solution of starch. Absence of I.

Official Bromides.

Acidum Hydrobromicum Dilutum	Ammonii Bromidum Potassii Bromidum

Sodii Bromidum

BUCHU FOLIA.

Buchu Leaves. N.O. Rutaceæ.

The dried leaves of, 1. Barosma betulina, *Bart. and Wendl.*; *Berg u. Schmidt, Off. Gewächse*, plate 1 *f.*—2. Barosma crenulata, *Hook.*; *Bot. Mag.* vol. lxii. plate 3413.—3. Barosma serratifolia, *Willd.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 47. Hab. S. Africa.

Characters.—Smooth, serrate, somewhat dentate, or crenate, and marked on the margins, and especially on their under surface, with oil-glands. Their colour is dull yellowish-green; odour strong, penetrating, and peculiar; taste aromatic, bitterish, and mint-like. 1. From half an inch to three-quarters of an inch long, cuneate or rhomboid-obovate, serrate-dentate, apex very blunt and usually recurved; texture more cartilaginous than in the other species. 2. From three-quarters to about an inch and a quarter long, thickish, oval-oblong or rhomboid-oval, somewhat blunt at the apex, narrowed at the base into a distinct petiole, finely serrate or crenate-serrate. 3. From an inch to an inch and a half long, linear-lanceolate, equally tapering to each end, actual apex truncate, sharply and closely serrate; texture thinner than in the other species.

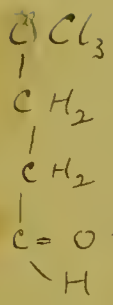
P.C. Volatile oil resin mucilage, in a layer beneath upper epidermis) bitter principle Rutin.

Preparations.

Infusum Buchu . . .	1 ounce to 1 pint
Tinctura Buchu . . .	$2\frac{1}{2}$ ounces to 1 pint

BUTYL-CHLORAL HYDRAS.

Hydrate of Butyl-Chloral.



Synonyms.—Hydrous Butyl-Chloral; Croton-Chloral Hydrate, wrongly so called.

Butyl Chloral is chlorinated butyric aldehyde $C_3H_4Cl_3COH$

$C_4H_5Cl_3O,H_2O$.

Butyl-chloral, produced by the action of dry chlorine gas on aldehyd cooled to a temperature of 14° F. (−10° C.), separated by fractional distillation, and converted into the solid hydrous butyl-chloral by the addition of water.

Characters and Tests.—In pearly white crystalline scales, having a pungent but not acid odour, resembling that of hydrous chloral, and an acrid nauseous taste. It fuses at about 172° F. (77°·8 C.) to a transparent liquid, which, in cooling, commences to solidify at about 160° F. (71°·1 C.) Soluble in about fifty parts of water, in its own weight of glycerine and of rectified spirit, and nearly insoluble in chloroform. The aqueous solution is neutral or but slightly acid to litmus paper. It does not yield chloroform when heated with solutions of potash or soda or with milk of lime. But it is decomposed + yields formate + chloride of the alkali used + Allylene Dichloride $C_2H_3CHCl_2$

Dose.—5 to 15 grains.

$C_3H_4Cl_3COH + 2KOH = C_3H_4Cl_2 + KCl + KCOOH + H_2O$

allylene dichloride

CAFFEINA.

Caffeine.

Synonyms.—Caffeia; Theina; Guaranina.

Largely prepared from tea dust.

$C_8H_{10}N_4O_2,H_2O$.

An alkaloid usually obtained from the dried leaves of Camellia Thea, *Link.*, or the dried seeds of Coffea arabica, *Linn.*, by evaporating aqueous infusions from which astringent and colouring matters have been removed.

Characters and Tests.—Colourless, silky, inodorous, acicular crystals. Soluble in 80 parts of cold water, the solution having a faintly bitter taste and being neutral to litmus. More soluble in boiling water and in rectified spirit, and very soluble in chloroform; sparingly soluble in ether. At 212° F. (100° C.) the crystals lose 8·49 per cent. of their weight, and at a higher temperature melt and volatilise without decomposition. Treated with a crystal of chlorate of potassium and a few drops of hydrochloric acid, and the mixture evaporated to dryness in a porcelain dish, a reddish residue results, which becomes purple when moistened with ammonia. In an aqueous solution of the alkaloid, tannic acid gives a white precipitate soluble in excess of the reagent.

Dose.—1 to 5 grains.

Preparation.—Caffeinæ Citras.

CAFFEINÆ CITRAS.

Citrate of Caffeine.

$C_8H_{10}N_4O_2,H_3C_6H_5O_7$.

A weak compound of caffeine and citric acid.

Take of

Caffeine	1 ounce
Citric Acid	1 ounce
Distilled Water	2 ounces

Dissolve the citric acid in the water, and stir the caffeine into the heated solution. Evaporate to dryness on a water-bath, constantly stirring towards the end of the operation. Reduce to a fine powder.

Characters and Tests.—A white inodorous powder with an acid and faintly bitter taste and an acid reaction on litmus. It is soluble in a mixture of two parts of chloroform and one part of rectified spirit. With a little water it forms a clear syrupy solution, which on dilution yields a white precipitate of caffeine that redissolves when ten parts of water have been added. Heated in the air, the salt chars and burns, leaving a mere trace of ash. From a boiling aqueous solution excess of lime water gives a white precipitate. Tannic acid yields a white precipitate soluble in excess of the reagent. If to a little of the salt a crystal of chlorate of potassium be added, and a few drops of hydrochloric acid, and the mixture be evaporated to dryness in a porcelain dish, a reddish residue results, which becomes purple when moistened with solution of ammonia.

Dose.—2 to 10 grains.

CALAMINA PRÆPARATA.

Prepared Calamine.

Synonym.—Lapis Calaminaris Præparata.

Native carbonate of zinc, calcined in a covered earthen crucible at a moderate temperature, powdered, and freed from gritty particles by elutriation.

Absence of silica &c.

Characters and Tests.—A pale pinkish-brown powder, without grittiness; almost entirely soluble, with effervescence, in acids. Since it has been calcined + a large proportion of CO_2 given off.

Preparation.—Unguentum Calaminæ.

CALCII CARBONAS PRÆCIPITATA.

Precipitated Carbonate of Calcium.

Synonyms.—Calcis Carbonas Præcipitata; Precipitated Carbonate of Lime.

$CaCO_3$.

Take of

Chloride of Calcium	5 ounces
Carbonate of Sodium	13 ounces
Boiling Distilled Water	a sufficiency

Dissolve the chloride of calcium and carbonate of sodium each in two pints of the water; well mix the two solutions and

$CaCl_2 + Na_2CO_3 = CaCO_3 + 2NaCl.$

allow the precipitate to subside. Collect this on a calico filter, wash it with boiling distilled water until the washings cease to give a precipitate with nitrate of silver, and dry the product at the temperature of 212° F. (100° C.)

Characters and Tests.—A white crystalline powder, insoluble in water, dissolving in hydrochloric acid with effervescence. The solution, when neutralised by ammonia, lets fall a copious white precipitate on the addition of oxalate of ammonium. With diluted nitric acid it gives a clear solution, which, if perfectly neutral and deprived of carbonic acid by boiling, is neither precipitated by saccharated solution of lime* added in excess, nor by solution of nitrate of silver.

* Absence of
Alumina
Magnesia
Ferric oxide +
Phosphates.

Dose.—10 to 60 grains.

Preparation containing Precipitated Carbonate of Calcium.

Trochisci Bismuthi . 4 grains in each lozenge, nearly

CALCII CHLORIDUM.

Chloride of Calcium.

$CaCl_2,2H_2O$.

It may be formed by neutralising hydrochloric acid with carbonate of calcium, adding a little solution of chlorinated lime and slaked lime to the solution, filtering, evaporating until it becomes solid, and finally drying the salt at about 400° F. (204°·4 C.)

Characters and Tests.—In white agglutinated masses, dry but very deliquescent, evolves no chlorine or hypochlorous acid on the addition of hydrochloric acid, and is entirely soluble in twice its weight of water, also in alcohol. The aqueous solution is not precipitated by the addition of lime water.

Absence of $CaCl_2O_2$

Absence of CO_2

Dose.—3 to 10 grains.

Preparation.—Liquor Calcii Chloridi.

rble (used as the source of $CaCO_3$) often contains $FeCO_3$ which is
verted into $FeCl_2$ rendering the Chloride of calcium impure.
addition of hypochlorite of Ca & slaked lime, the iron is
cipitated as ferric hydrate.

$4FeCl_2 + Ca2ClO + Ca2HO + 2H_2O - 2Fe_2(OH)_6 + 5CaCl_2$.

CALCII HYDRAS.

Hydrate of Calcium.

Synonyms.—Calcis Hydras; Hydrate of Lime; Slaked Lime.

Hydrate of calcium, $Ca(HO)_2$, with some impurities.

Take of

Lime	2 pounds
Distilled Water	1 pint

Place the lime in a metal pot, pour the water upon it, and when vapour ceases to be disengaged cover the pot with its lid, and set it aside to cool. When the temperature has fallen to that of the atmosphere, put the slaked lime on an iron-wire sieve, and by gentle agitation cause the fine powder to pass through the sieve, rejecting what is left. Put the powder into a well-stoppered bottle, and keep it excluded as much as possible from the air. Slaked lime should be recently prepared.

Preparations.

Liquor Calcis | Liquor Calcis Saccharatus

CALCII HYPOPHOSPHIS.

Hypophosphite of Calcium.

Synonyms.—Calcis Hypophosphis; Hypophosphite of Lime.

$Ca(PH_2O_2)_2$.

The lime must not be in great excess else the hypophosphite will be turned into phosphate as fast as it is formed.

Obtained by heating phosphorus and nearly twice its weight of hydrate of calcium with water until phosphuretted hydrogen gas ceases to be evolved, then filtering the liquid, separating uncombined lime with carbonic acid gas, and evaporating the remaining solution until the salt separates in a crystalline condition.

$$2P_4 + 6H_2O + 3Ca(OH)_2 = 3Ca(PH_2O_2)_2 + 2PH_3$$

Characters and Tests.—A white crystalline salt, with a pearly lustre and a bitter nauseous taste. Insoluble in cold rectified spirit. Soluble in six parts of cold water, and only slightly more soluble in hot water. The crystals do not lose water when heated to 300° F. (148°·9 C.) Heated to redness they ignite, evolving spontaneously inflammable phosphuretted hydrogen, and leaving a reddish-coloured residue amounting to about 80 per cent. of the salt. Its aqueous solution yields with oxalate of ammonium a white precipitate insoluble in acetic acid but soluble in hydrochloric acid, and with perchloride of mercury a white and afterwards a grey precipitate; it yields no precipitate with acetate of lead. Five grains boiled for ten minutes with a solution of twelve grains of permanganate of potassium yields, on filtration, a nearly colourless solution. Absence of phosphates.

Dose.—5 to 10 grains.

Pub. Sodii hypophosphis.

CALCII PHOSPHAS.

Phosphate of Calcium.

Synonyms.—Calcis Phosphas; Phosphate of Lime.

$Ca_3(PO_4)_2$.

Take of

Bone Ash	4 ounces
Hydrochloric Acid . . .	6 fluid ounces
Water	2 pints
Solution of Ammonia . .	12 fluid ounces, or a sufficiency
Distilled Water . . .	a sufficiency

Digest the bone ash in the hydrochloric acid, diluted with a pint of water, until it is dissolved; boil for a few minutes; filter; add the remainder of the water, and afterwards the solution of ammonia, until the mixture acquires an alkaline reaction; and, having collected the precipitate on a calico filter, wash it with boiling distilled water as long as the liquid which passes through occasions a precipitate when dropped

$a_3 2PO_4 + 4HCl = CaH_4 2PO_4 + 2CaCl_2$

$aH_4(PO_4)_2 + 2CaCl_2 + 4NH_4HO = Ca_3(PO_4)_2 + 2NH_4Cl + 4H_2O$

usium contains small quantities of $CaCO_3$ + CaS. These

e decomposed by the acid + on boiling CO_2 + H_2 [illegible] into solution of nitrate of silver acidulated with nitric acid. Dry the washed product at a temperature not exceeding 212° F. (100° C.)

Characters and Tests.—A light white amorphous powder, insoluble in water, but soluble without effervescence in diluted nitric acid; the solution continues clear when a dilute solution of acetate of sodium is added in excess, but lets fall a white precipitate on the subsequent addition either of a little oxalate of ammonium or of perchloride of iron. The nitric solution is only rendered slightly turbid by solution of nitrate of silver. Of the recently dried powder, ten grains dissolves (1) perfectly and without effervescence in diluted hydrochloric acid, and the solution yields with ammonia a white precipitate, insoluble in boiling solution of potash, and weighing nearly ten grains when washed and dried.

(1) absence of silica

Presence of alumina ←

Dose.—10 to 20 grains.

Preparation containing Phosphate of Calcium.
Pulvis Antimonialis, 2 parts in 3.

CALCII SULPHAS.

Sulphate of Calcium.

Synonyms.—Calcis Sulphas; Sulphate of Lime.

Native sulphate of calcium ($CaSO_4,2H_2O$) rendered nearly anhydrous by heat.

Preparation.—Calx Sulphurata.

CALUMBÆ RADIX.

Calumba Root.

a form of tubercule

N.O. Menispermaceæ

The dried transversely cut slices of the root of Jateorhiza Calumba, *Miers* (Cocculus palmatus, *DC.*); *Bentl. and Trim. Med. Pl.* vol. i. plate 13.

E. Africa cultivated in E. Indies.

Characters and Test.—In irregular flattish circular or somewhat oval slices, from about an inch to two inches or more in diameter, and from one-eighth to half an inch or more in thickness. The cortical portion is thick, covered by a wrinkled brownish-yellow coat, and separated from the central portion, which is concave on both surfaces, by a fine dark-coloured line. The pieces have a greyish- or greenish-yellow colour, a feeble somewhat musty odour, bitter taste, break readily with a mealy fracture, and are easily reduced to powder. A decoction, when cold, is coloured bluish-black by solution of iodine.

P.C. Calumbine ·5% Berberine
Calumbic acid, Starch
Mucilage.

Dose in powder.—5 to 20 grains.

Preparations.

Extractum Calumbæ	about $2\frac{1}{2}$ ounces from 1 pound
Infusum Calumbæ	1 ounce to 1 pint
Mistura Ferri Aromatica	$\frac{1}{2}$ ounce to 16 fluid ounces
Tinctura Calumbæ	$2\frac{1}{2}$ ounces to 1 pint

CALX.

Lime.

An alkaline earth, oxide of calcium, CaO, with some impurities, obtained by calcining chalk or limestone so as to expel carbonic acid gas.

Characters and Tests.—In compact masses of a whitish colour, which readily absorb water, and which, when rather less than their weight of water is added, swell and fall into powder with the development of much heat. The powder obtained by this process of slaking, when agitated with distilled water, gives, after filtration, a clear solution which has an alkaline reaction, and yields a white precipitate with oxalate of ammonium. The powder obtained by slaking dissolves, without much residue and without effervescence, in diluted hydrochloric acid, and if the solution thus formed be evaporated to dryness, and the residue be redissolved in water, only a very scanty precipitate forms on the addition of saccharated solution of lime.

absence of alumina
oxide of iron etc.

Preparation.—Calcii Hydras.

Thorpe's formula $CaCl_2 \cdot 2Ca{<}^{OH}_{OCl} \cdot 3H_2O$.

It is a chemical compound & not a mere mixture of $CaCl_2$ & CaO_2Cl_2 as is demonstrated by the fact that it yields nothing to alcohol & it is only feebly deliquescent.

CALX CHLORINATA.

Cl - Ca - O - Cl.

Chlorinated Lime.

A product obtained by exposing slaked lime to the action of chlorine gas as long as the latter is absorbed. It possesses bleaching and disinfecting properties. It may be regarded as consisting, chiefly, of a compound of hypochlorite and chloride of calcium ($CaCl_2O_2$,$CaCl_2$), or as a direct compound of chlorine and lime ($CaOCl_2$).

$2Ca(OH)_2 + 2Cl_2 = CaCl_2O_2 \cdot CaCl_2 + 2H_2O$.

Characters and Tests.—A dull white powder with a feeble odour of chlorine, partially soluble in water. The solution evolves chlorine copiously upon the addition of oxalic acid, and deposits at the same time oxalate of calcium. When fresh, five grains mixed with fifteen grains of iodide of potassium, and dissolved in four fluid ounces of water, produces, when acidulated with one fluid drachm of hydrochloric acid, a reddish solution, which requires for the discharge of its colour at least 467 grain-measures of the volumetric solution of hyposulphite of sodium, corresponding to 33 per cent. of available chlorine. 1 c.c. $\frac{N}{10}$ "Thio" = ·00355 gm Cl.

Good commercial chlorinated lime will yield 37% available Cl when fresh.

Preparations.

Liquor Calcis Chlorinatæ . . 2 ounces to 1 pint

Preparations for which Chlorinated Lime is used.

Chloroform | Vapor Chlori
Liquor Sodæ Chlorinatæ

CALX SULPHURATA.

Sulphurated Lime.

For pills triturate with an equal quantity of sacch. lact. & as much P. glyc. Dec. as will make the weight up to 1 grain mass c glyc. Trag.

Synonyms.—Calcii Sulphidum; Sulphide of Calcium.

A mixture containing not less than fifty per cent. of sulphide of calcium (CaS).

Take of
Sulphate of Calcium, in fine powder . . 7 ounces
Wood Charcoal, in fine powder . . . 1 ounce

Mix thoroughly. Heat to redness in an earthen crucible until the black colour has disappeared. Cool, and at once place the whitish residue in a stoppered bottle.

Characters and Tests.—A nearly white powder with a smell somewhat resembling that of sulphuretted hydrogen. If eight grains be added to a cold solution of fourteen grains of sulphate of copper in an ounce of water, a little hydrochloric acid be added, and the mixture be then well stirred and heated to a temperature approaching that of ebullition until all action has ceased, the filtered liquid should give no red colour with ferrocyanide of potassium. $CuSO_4 \cdot 5H_2O + CaS = CuS + CaSO_4 \cdot 2H_2O + 3H_2O$

Dose.—$\frac{1}{10}$ to 1 grain. 249·5 = 72
∴ 14 = 4 = 8 Calx Sulphurata.

CAMBOGIA.

Gamboge.

N. O. Clusiaceæ
(Guttiferæ)

A gum-resin obtained from Garcinia Hanburii, *Hook. fil.* (Garcinia Morella, *var.* pedicellata, *Hanbury*); *Trans. Linn. Soc. Lond.* vol. xxiv. plate 50. Anam. Cambogia & Siam
Singapore.

Characters and Tests.—In cylindrical solid or hollow rolls longitudinally striated on the surface, and either distinct, or more or less agglutinated or folded together into masses; breaking with a conchoidal fracture, the fractured surface being opaque, smooth, glistening, and of a uniform reddish-yellow colour; powder bright yellow; no odour; taste very acrid. When rubbed with water forming a yellow emulsion; it is completely dissolved by the successive action of rectified spirit and water; and an emulsion made with boiling water and cooled, does not become green with the solution of iodine.

Dose.—1 to 4 grains. (starch)

Preparation.

Pilula Cambogiæ Composita . 1 part in 6, nearly

P.C. gum 10 - 26 % Resin or Gambogic acid 70 - 80 %

CAMPHORA.

Camphor.

N. O. Lauraceæ

$C_{10}H_{16}O$

A stearoptene obtained from the wood of Cinnamomum Camphora, *Nees and Eberm* (Camphora officinarum, *Nees*); *Nees, Plant. Med.* plate 130. Imported in the crude state, and purified by sublimation. China + Japan

Characters.—In solid colourless translucent crystalline masses, which present numerous fissures when of any size; somewhat tough, but readily powdered if moistened with rectified spirit, ether, or chloroform; it has a powerful penetrating odour, and a pungent somewhat bitter taste, followed by a sensation of cold. It floats on water, burns readily with a bright smoky flame, volatilises somewhat rapidly even at ordinary temperatures, and sublimes entirely when heated; it is very slightly soluble in water, but readily soluble in rectified spirit, ether, or chloroform.

Dose.—1 to 10 grains.

Preparations containing Camphor.

Aqua Camphoræ	
Linimentum Aconiti	14½ grains in 1 fluid ounce
,, Belladonnæ	14½ grains in 1 fluid ounce
,, Camphoræ	1 in 5, nearly
,, ,, Compositum	54½ grains in 1 fluid ounce
,, Chloroformi	1 in 10
, Hydrargyri	1 in 15
,, Opii	1 in 10, nearly
,, Saponis	1 in 21
,, Sinapis Compositum	1 in 16
,, Terebinthinæ	1 in 20
,, ,, Aceticum	1 in 11
Spiritus Camphoræ	1 in 10
Tinctura Camphoræ Composita	1½ grain in 1 fluid ounce
Unguentum Hydrargyri Compositum	1½ ounce in 13½ ounces

CANELLÆ CORTEX.

Canella Bark.

N.O. Canellaceæ

The bark of Canella alba, *Murray*, deprived of its corky layer and dried; *Bentl. and Trim. Med. Pl.* vol. i. plate 26. Bahamas + W. Indies.

Characters.—In quills or irregular pieces which are generally more or less twisted and broken longitudinally; it has a pale orange-brown or buff colour externally, is commonly marked by roundish depressions or scars, and sometimes the remains of the corky layer may be seen here and there as silvery grey patches; internally its colour is paler, being whitish or yellowish-white. It has an agreeable odour somewhat resembling a mixture of cloves and cinnamon, and a pungent bitter acrid taste.

Preparation.

Vinum Rhei . . . . 60 grains to 1 pint

P.C. Vol: Oil (1% contains eugenol) resin, bitter principle, mannite, mucilage starch albumen no tannin.

CANNABIS INDICA.

Indian Hemp.

N.O. Cannabinaceæ

The dried flowering or fruiting tops of the female plants of Cannabis sativa, *Linn.*; *Berg u. Schmidt, Off. Gewächse*, plate xix. *b*; grown in India, and from which the resin has not been removed. It is known in India as Gunjah or Ganga. Indig: to C + W. Asia. Principally produced in districts of Bogra + Rajshahi N of Calcutta.

Characters.—In small more or less aggregated masses, from about one and a half to two and a half inches in length, and consisting of the tops of one or more alternate branches bearing the remains of the flowers and smaller leaves with a few ripe fruits, and the whole pressed together by adhesive resinous matter; or, it is composed of straight stiff woody stems several inches long, surrounded by the branched flower-stalks. It is rough to the touch, very brittle, of a dusky-green

P.C. Vol Oil, resin, + a volatile alkaloid.

colour, with scarcely any taste, but having a faint, peculiar, narcotic, not unpleasant odour.

Preparations.

Extractum Cannabis Indicæ	
Tinctura Cannabis Indicæ	22 grains of extract in 1 fluid ounce, nearly

CANTHARIS.

Cantharides.

N.O. Coleoptera

Mainly upon Oleaceæ + Caprifoliaceæ

The beetle, Cantharis vesicatoria, *De Geer*, dried. S + C. Europe

Characters.—From about three-quarters of an inch to an inch long, and a quarter of an inch broad, with two long elytra or wing-sheaths of a shining coppery-green colour, under which are two thin brownish transparent membranous wings; odour strong and disagreeable; powder greyish-brown, containing shining green particles.

Preparations.

Acetum Cantharidis	2 ounces to 1 pint
Charta Epispastica	
Emplastrum Calefaciens	1 part in 24, nearly
,, Cantharidis	1 part in 3
Liquor Epispasticus	1 ounce to 4 fluid ounces
Tinctura Cantharidis	5½ grains to 1 fluid ounce
Unguentum Cantharidis	1 part in 8, nearly

P.C. Cantharidin ($C_{10}H_{12}O_4$) ·4 – ·5 %; [illegible] an odorous compound ash about 6 %.

CAPSICI FRUCTUS.

Capsicum Fruit.

N.O. Solanaceæ

Probably tropical America. Cultivated in tropical countries

The dried ripe fruit of Capsicum fastigiatum, *Blume; Wight, Icones Plant. Ind. Orient.* vol. iv. plate 1617.

Characters.—From about half to three-quarters of an inch long and a quarter of an inch in diameter; somewhat shrivelled, oblong-conical, obtuse, and composed of a smooth shining brittle thin translucent pericarp of a dull orange-red colour, enclosing several small roundish or ovoid flat seeds. Taste of both pericarp and seeds intensely pungent; odour peculiar and pungent.

Preparation.

Tinctura Capsici . . 16½ grains to 1 fluid ounce

P.C. Capsaicin (mainly in placenta) Fixed oil, fat acids, trace Vol. oil; trace Vol. alkaloid, resin, waxy + colouring matter.

CARBO ANIMALIS.

Animal Charcoal. Bone Black.

"The residue of bones which have been exposed to a red heat without the access of air. Consists principally of carbon, and phosphate and carbonate of calcium."

Preparation.—Carbo Animalis Purificatus.

The method of determining the value of animal charcoal for the purposes of the sugar refiner is based on the ~~amount~~ estimation of the amount of lime the sample will afford.

CARBO ANIMALIS PURIFICATUS.

Purified Animal Charcoal.

Animal charcoal from which the earthy salts have been almost wholly removed. Product, about ten per cent.

Take of

Bone Black, in powder . . .	16 ounces
Hydrochloric Acid	10 fluid ounces
Distilled Water	a sufficiency

Mix the hydrochloric acid with a pint of the water, and add the bone black, stirring occasionally. Digest at a moderate temperature for two days, agitating from time to time; collect the undissolved charcoal on a calico filter, and wash with distilled water until what passes through gives scarcely any precipitate with nitrate of silver. Dry the charcoal, and then heat it to redness in a closely covered crucible.

Characters and Tests.—A black pulverulent substance; inodorous and almost tasteless. Ten or twelve grains well shaken with an ounce of water containing about a fluid drachm of 'solution of litmus' removes the dissolved colouring matter; the mixture, when thrown upon a filter, passing through colourless. When burned at a high temperature with a little red oxide of mercury and free access of air, it leaves not more than about two per cent. of residue. A practical impossibility to obtain a sample yielding only 2 % of ash.

Dose.—20 to 60 grains.

CARBO LIGNI.

Wood Charcoal.

Wood charred by exposure to a red heat without access of air.

Characters and Tests.—In black brittle porous easily powdered masses, without taste or smell, very light, and retaining the form and texture of the wood from which it was obtained. When burned at a high temperature with free access of air, it leaves not more than about two per cent. of ash.

Dose.—20 to 60 grains.

Preparation.—Cataplasma Carbonis.

CARDAMOMI SEMINA.

N.O. Zingiberaceæ.

Cardamoms.

The dried ripe seeds of the Malabar Cardamom, Elettaria Cardamomum, *Maton, Trans. Linn. Soc.* vol. x. plates 4, 5. The seeds are best kept in their pericarps, in which condition they are imported; but when required for use they should be separated and the pericarps rejected.

Characters.—About one-sixth of an inch long, irregularly angular, transversely wrinkled, dark reddish-brown externally,

Hab: Indigenous to Hindostan. Largely cultivated in forest of Mysore, & at Coorg and Wynaad on Malabar coast.

whitish within; odour and taste agreeably warm and aromatic. The pericarps in which they are enclosed vary from about two-fifths of an inch to nearly an inch long, and from about one-fifth to two-fifths of an inch broad; they are ovoid or oblong, obtusely triangular, shortly beaked, rounded at the base, brownish-yellow, longitudinally striated, and without taste or odour.

Preparations.

Extractum Colocynthidis Compositum	1 part in 27, nearly
Pulvis Cinnamomi Compositus	1 part in 3
,, Cretæ Aromaticus	1 part in 44
Tinctura Cardamomi Composita	¼ ounce to 1 pint
,, Gentianæ Composita	¼ ounce to 1 pint
,, Rhei	¼ ounce to 1 pint
Vinum Aloes	80 grains to 1 pint

P.C. An essential oil, 5%: a fixed fatty oil, a colouring principle, starch & gummy matter. On incineration 15% ash which contains a notable quantity of manganese.

CARUI FRUCTUS.

Caraway Fruit. N.O. Umbelliferæ

The dried fruit of Carum Carui, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 121. C. & W. Asia (cultivated)

Characters.—The fruit is usually separated into its two constituent mericarps, which vary from about one-sixth to one-fourth of an inch long; they are slightly curved, somewhat tapering at each end, brown, with five paler longitudinal ridges, and in each of the intervening spaces there is a large and conspicuous vitta. Odour agreeably aromatic; taste pleasant, sweetish, and spicy.

Preparations.

Aqua Carui	1 pound to 1 gallon
Confectio Opii	1 part in 10, nearly
,, Piperis	3 parts in 20
Oleum Carui	
Pulvis Opii Compositus	1 part in 2½
Tinctura Cardamomi Composita	¼ ounce to 1 pint
,, Sennæ	½ ounce to 1 pint

P.C. 5–7% vol. oil. Fixed oil, resin, sugar mucilage little tannin.

H

CARYOPHYLLUM.

Clove.

N.O. Myrtaceæ.

The dried flower-bud of Eugenia caryophyllata, *Thunb.* (Caryophyllus aromaticus, *Linn.*); *Bot. Mag.* vol. liv. plates 2749, 2750. Moluccas Cult^d in tropics.

Characters.—Over half an inch long, and consisting of a dark-brown wrinkled sub-cylindrical and somewhat angular calyx tube, which tapers below, and is surmounted by four teeth, between which the paler-coloured petals, enclosing the numerous stamens and style, are rolled up in the form of a ball. Odour strong, fragrant, and spicy; taste very pungent and aromatic. It emits oil when indented with the nail.

Preparations.

Infusum Aurantii Compositum .	56 grains to 1 pint
,, Caryophylli . . .	½ ounce to 1 pint
Mistura Ferri Aromatica . .	¼ ounce to 16 fluid ounces
Oleum Caryophylli	
Pulvis Cretæ Aromaticus . .	1 part in 36
Vinum Opii	75 grains to 1 pint

P.C. 18% Vol: Oil 13% tannin 3% gum 6% resin caryophyllin eugenin.

CASCARILLÆ CORTEX.

Cascarilla Bark.

N.O. Euphorbiaceæ.

The dried bark of Croton Eluteria, *J. J. Bennett; Pharmaceutical Journal,* 2nd ser. vol. iv. page 150, plate 1.

A native of the Bahamas. Chiefly exported from Nassau

Characters.—In quills, from one to three or more inches in length, and from one-sixth to half an inch in diameter, covered with a dull-brown easily separable corky layer, which is more or less coated with a silvery- or greyish-white lichen; fracture brown, short, and resinous. It has a warm and nauseously bitter taste; and an agreeable aromatic odour, more especially when burned.

Verrucaria albissima

Comp: Nearly 1% essential oil, a bitter principle cascarillin C.. a resin composed of 2 bodies one of which is readily soluble in alkalies. A little tannin wax & starch.

Preparations.

Infusum Cascarillæ	2 ounces to 1 pint
Tinctura Cascarillæ	2½ ounces to 1 pint

CASSIÆ PULPA.

Cassia Pulp.

N.O. Leguminosae.

The pulp obtained from the recently imported pods of Cassia Fistula, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 87. East India; native of tropical Africa + America.

yield 30%

Characters.—The pods are from a foot and a half to two feet long, and nearly one inch in diameter, shortly stalked, pointed, blackish-brown, very hard, indehiscent, but the sutures marked by two smooth longitudinal bands; divided internally by thin transverse partitions into numerous cells, each containing a solitary smooth flattish-oval reddish-brown seed, more or less surrounded by pulp, and hence the pods should not rattle when shaken. The pulp is viscid, blackish-brown, sweet in taste, and somewhat sickly in odour. When obtained separately the pulp frequently contains the seeds and the partitions or dissepiments; these should be removed when it is used for pharmaceutical purposes.

Preparation.—Confectio Sennæ, 1 part in 8, nearly.

P.C. 60% sugar mucilage Pectin albuminoids Ca C_2O_4.

CATAPLASMA CARBONIS.

Charcoal Poultice.

Absorbs the foetor of ulcers.

Take of

Wood Charcoal, in powder	½ ounce	or	1 part
Crumb of Bread	2 ounces	,,	4 parts
Linseed Meal	1½ ounce	,,	3 parts
Boiling Water	10 fluid ounces	,,	20 fluid parts

Macerate the bread in the water for ten minutes near the fire, then mix, and add the linseed meal gradually, stirring the ingredients, that a soft poultice may be formed. Mix with this half the charcoal, and sprinkle the remainder on the surface of the poultice.

"cataplasma" is soft semi-solid used as a means of applying heat + moisture with or without active medicinal agents

Used to ease pain in cancer.

CATAPLASMA CONII.

Hemlock Poultice.

Take of

Juice of Hemlock	1 fluid ounce	or	1 fluid part
Linseed Meal	4 ounces	,,	4 parts
Boiling Water	10 fluid ounces	,,	10 fluid parts

To get rid of the spirit ←

Evaporate the hemlock juice to half its volume, add this to the linseed meal and water previously mixed, and stir them together.

CATAPLASMA FERMENTI.

Yeast Poultice.

Take of

Beer Yeast	6 fluid ounces	or	3 fluid parts
Wheaten Flour	14 ounces	,,	7 parts
Water, heated to 100° F. (37°·8 C.)	6 fluid ounces	,,	3 fluid parts

At a higher temp fermentation will cease

Mix the yeast with the water, and stir in the flour. Place the mass near the fire till it rises.

CATAPLASMA LINI.

Linseed Poultice.

Take of

Linseed Meal	4 ounces	or	2 parts
Boiling Water	10 fluid ounces	,,	5 fluid parts

Mix the linseed meal gradually with the water, with constant stirring. N.B. Meal is added to water not vice versa.

CATAPLASMA SINAPIS.

Mustard Poultice.

Take of

Mustard, in powder	$2\frac{1}{2}$ ounces, or a sufficiency
Linseed Meal	$2\frac{1}{2}$ ounces
Boiling Water Water	of each a sufficiency

Mix the mustard with two to three ounces of lukewarm water; mix the linseed meal with six to eight ounces of boiling water; add the former to the latter, and stir them together.

About 90° F. This develops the essential oi a higher temp would coagulate the active prin & no Vol oil would be form

The myrosin coagulates at 140° F.

CATAPLASMA SODÆ CHLORINATÆ.

Chlorine Poultice.

Take of

Solution of Chlorinated Soda .	2 fluid ounces	or	1 fluid part
Linseed Meal .	4 ounces	,,	2 parts
Boiling Water .	8 fluid ounces	,,	4 fluid parts

Mix the linseed meal gradually with the water, and add the solution of chlorinated soda, with constant stirring. If the solution of chlorinated soda be added to the boiling water it would be converted into NaCl + NaClO₃

CATECHU.

Catechu.

Synonym.—Catechu Pallidum. N. O. Rubiaceæ.

An extract of the leaves and young shoots of Uncaria Gambier, *Roxb. Trans. Linn. Soc.* vol. ix. plate 22. E. Indies.

Characters and Tests.—In cubes, or masses of variable size formed of more or less agglutinated cubes. The separate cubes are usually about an inch square on each side, deep reddish-brown externally, pale cinnamon-brown internally, dry, breaking readily with a dull earthy fracture, and when viewed under the microscope presenting myriads of very small acicular crystals. Taste at first bitter and very astringent, but subsequently sweetish; no odour. Entirely soluble in boiling water. The decoction when cool is not rendered blue by iodine.

Dose.—10 to 30 grains.

Preparations.

Infusum Catechu . . .	16 grains to 1 fluid ounce
Pulvis Catechu Compositus .	1 part in 2½
Tinctura Catechu . . .	54½ grains to 1 fluid ounce
Trochisci Catechu . . .	1 grain in each lozenge

P.C. Catechin, catechutannin quercetin.

CERA ALBA.

White Wax.

Yellow wax bleached by exposure to moisture, air, and light.

Characters and Tests.—Hard, nearly white, translucent. It should respond to the tests for yellow wax.

Preparations.

Charta Epispastica | Unguentum Cetacei
Unguentum Simplex

C.C. – Myricin, cerin or cerotic acid 12-14% of hydrocarbons + yellow wax contains also aromatic + colouring matters.

CERA FLAVA.

Yellow Wax.

N.O. Hymenoptera.

Prepared from the honeycomb of the Hive Bee, Apis mellifica, *Linn.*

Characters and Tests.—Firm, breaking with a granular fracture, yellowish, having an agreeable honey-like odour. Not unctuous to the touch. Should be readily and entirely soluble in hot oil of turpentine. Should not yield more than three per cent. to cold rectified spirit, and nothing to water or to a boiling solution of soda, the two latter fluids after filtration neither being turbid nor yielding a precipitate on the addition of hydrochloric acid. Specific gravity 0·950 to 0·970. Melts at 146° F. (63°·3 C.) when tested in the following manner. Liquefy a few grains, and draw a little of the fluid up into a capillary tube; fix a piece of the filled capillary tube to the bulb of a thermometer by thread; immerse the bulb and tube in a beaker of water and heat the latter gently; at the moment the opaque rod of wax becomes transparent, note the temperature. The solidifying point is two to three degrees lower than the melting point. Boiling water in

Absence of the insol part of comb

Absence of resin

Absence of fat acids + Japan wax

Absence of soap

Absence of soft paraffins fats etc.

which it has been agitated is not, when cooled, rendered blue by iodine. *absence of flour.*

Preparations.

Cera Alba
Emplastrum Calefaciens
" Cantharidis
" Galbani
" Picis
" Saponis Fuscum
Pilula Phosphori

Unguentum Cantharidis
" Hydrargyri Compositum
" Picis Liquidæ
" Resinæ
" Sabinæ
" Terebinthinæ

CEREVISIÆ FERMENTUM.

Beer Yeast.

The ferment obtained in brewing beer, and produced by Saccharomyces (Torula, *Turpin*) cerevisiæ, *Meyen.* Fungi.

Characters.—Viscid, semifluid, frothy, exhibiting under the microscope numerous isolated roundish or oval cells, or short branched filaments composed of united cells; odour peculiar, taste bitter. Said to contain invertin.

Dose.—½ to 1 ounce. Dry or German yeast is obtained by removing the water by pressure.

Preparation.—Cataplasma Fermenti.

CERII OXALAS.

Oxalate of Cerium.

$Ce_2(C_2O_4)_3,9H_2O.$

Native ore of cerium is Cerite – a silicate of Fe, + Ca with Ce. La. D.

A salt which may be obtained as a precipitate by adding solution of oxalate of ammonium to a soluble salt of cerium. It usually contains some oxalate of lanthanum and oxalate of didymium.

Prep. The powdered mineral is boiled in HCl conc: for several hours evaporating, diluting + filtering to separate silica. Adding NH_4HS to ppt. all the metals except Ca. Filter wash. Redissolve in HCl adding $H_2C_2O_4$ ppt. contains Ce with La + D as oxalates. It is strongly calcined the resulting oxides of La + D dissolved in [illegible] [illegible] [illegible] of Ce. The residual oxide of Ce dissolved in boiling HCl – oxalate of ammonium added to ppt. oxalate of cerium $Ce_2 3C_2O_4 9H_2O$

Another process. The cerite is treated with HCl. Product oxidised with a little HNO$_3$. H$_2$S passed thro' the solution to ppt heavy metals. Filtrate oxidised with a little Cl. Neutralised + ppt of Fe with NH$_3$ [illegible]. Filtrate concentrated + the cerium ppt with oxalic acid. The crude oxalate is dissolved in H$_2$SO$_4$ + evaporated to dryness. The residue taken up with very weak H$_2$SO$_4$. Concentrated + the oxalate ppt with oxalate of ammonium.

Characters and Tests.—A white granular powder, insoluble in water, decomposed at a dull red heat into a reddish-brown powder which dissolves completely and without effervescence in boiling hydrochloric acid, and the resulting solution gives with solution of sulphate of potassium a white crystalline precipitate. If the salt be boiled with solution of potash and filtered, the filtrate is not affected by solution of chloride of ammonium, but when supersaturated with acetic acid it gives with chloride of calcium a white precipitate, which is soluble in hydrochloric acid. Ten grains, when incinerated, lose 5·2 grains in weight.

Colour partly due to D

Absence of carbs + oxalates (other than Ce)

Absence of alumina

Dose.—1 to 2 grains.

CETACEUM.

Spermaceti.

Class Mammalia
N.O. Cetaceæ.

A concrete fatty substance, obtained, mixed with oil, from the head of the Sperm Whale, Physeter macrocephalus, *Linn.* It is separated from the oil by filtration and pressure, and afterwards purified. Pacific + Indian oceans

Not a bone fat.

Characters and Tests.—Crystalline, pearly-white, glistening, translucent, with little taste or odour, reducible to powder by the addition of a little rectified spirit. It is insoluble in water, but soluble in ether, chloroform, or boiling rectified spirit. Scarcely unctuous to the touch. Melting point 111° to 122° F. (43°·9 to 50° C.) when tested by the method described in connection with Cera Flava.

Absence of solid fats

Preparations.

Charta Epispastica | Unguentum Cetacei

P.C. Mainly cetyl palmitic ester or cetin

CETRARIA.

Iceland Moss.

v.o. Lichenes

Synonym.—Iceland Lichen.

The dried lichen, Cetraria islandica, *Ach.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 302.

Characters.—Foliaceous, much branched in an irregular dichotomous manner into fringed obtuse or truncate flattened lobes; crisp, smooth, and usually brownish- or greyish-white above, whitish beneath, and marked irregularly with small white depressed spots. Almost odourless when dry, but when moistened with water having a feeble seaweed-like odour; taste mucilaginous and slightly bitter. A strong decoction gelatinises on cooling.

Preparation.—Decoctum Cetrariæ, 1 ounce to 1 pint.

P.C. About 70% Lichenin starch $C_{12}H_{20}O_{10}$ small quantities of cetraric acid – a peculiar chlorophyll thallochlor.

CHARTA EPISPASTICA.

Blistering Paper.

Take of

White Wax . .	4 ounces	or . .	16 parts
Spermaceti . .	1½ ounce	„ . .	6 parts
Olive Oil . . .	2 fluid ounces .	„ . .	8 fluid parts
Resin . . .	¾ ounce	„ . .	3 parts
Canada Balsam . .	¼ ounce	„ . .	1 part
Cantharides, in powder	1 ounce	„ . .	4 parts
Distilled Water . .	6 fluid ounces .	„ . .	24 fluid parts

Digest all the ingredients, excepting the Canada balsam, in a water-bath for two hours, stirring them constantly, then strain, and separate the plaster from the watery liquid. Mix the Canada balsam with the plaster melted in a shallow vessel, and pass strips of paper over the surface of the hot liquid, so that one side of the paper shall receive a thin coating of plaster.

It may be convenient to employ paper ruled so as to indicate divisions each of which is one square inch.

The Chartæ B.P. consist of paper coated on one side with an active medicinal substance & employed to produce vesication or rubefaction.

This does not keep on account of the large amount of fatty oil present. This should be removed with petroleum ether etc before mixing with the G. P. solution.

CHARTA SINAPIS.

Mustard Paper.

Take of

Mustard, in powder . . .	1 ounce
Solution of Gutta Percha . .	2 fluid ounces, or a sufficiency

Mix the mustard with the gutta-percha solution so as to form a semifluid mixture, and having poured this into a shallow flat-bottomed vessel, such as a dinner-plate, pass strips of cartridge-paper over its surface so that one side of the paper shall receive a thin coating of the mixture. Then lay the paper on a table with the coated side upwards, and let it remain exposed to the air until the coating has hardened.

Before being applied to the skin, let the mustard paper be immersed for a few seconds in tepid water.

CHIRATA.

V.O. Gentianaceæ.

Chiretta.

The dried plant, Ophelia Chirata, *Griseb.*; *Wallich, Plant. Asiat.* (*Gentiana Chirata*), vol. iii. plate 252. Collected when the fruit begins to form. Mountains of N. India

Characters.—Root two to three inches long, usually unbranched. Stem three feet or more long, rounded below and slightly quadrangular above, branched in a dichotomous manner, smooth, orange-brown or purplish. Leaves ovate, 5–7-ribbed; flowers small, numerous, panicled. No odour; taste very bitter. The stem, except in the lower part, consists of a thin woody ring, enclosing a large continuous easily separable pith of a yellowish colour.

Preparations.

Infusum Chiratæ	½ ounce to 1 pint
Tinctura Chiratæ	2½ ounces to 1 pint

P.C. Ophelic acid; glucoside chiratin.

hen the Chlorine acts on alcohol it first produces aldehyde and, Cl. The aldehyde reacting with more alcohol produces acetal + this with more chlorine forms trichloracetal & HCl. These two again reacting form alcoholate of chloral + ethyl chloride. On shaking this with H_2SO_4 chloral separates as an oily liquid on the top of the ethyl acid sulphate. The liquid chloral is removed + distilled with lime to free from traces of H_2SO_4. Water is now added when the mass solidifies into a cake of chloral hydrate which is crystalised from boiling $CHCl_3$

$H_3C\cdot H_2OH + Cl_2 = CH_3COH + HCl$

$H_3COH + 2CH_3CH_2OH = CH_3\cdot CH(OC_2H_5)_2 + H_2O$

${}_3\cdot CH(OC_2H_5)_2 + Cl_6 = CCl_3\cdot CH(OC_2H_5)_2 + 3HCl$

${}_3\cdot CH\genfrac{}{}{0pt}{}{-OC_2H_5}{\setminus OC_2H_5} + HCl = CCl_3CH\genfrac{}{}{0pt}{}{-OC_2H_5}{\setminus OH} + C_2H_5{-}Cl$

$l_3\cdot CH\cdot OC_2H_5\cdot OH + H_2SO_4 = CCl_3\cdot COH + C_2H_5{-}HSO_4 + H_2O$

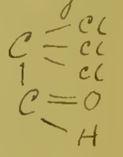
CHLORAL HYDRAS.

Hydrate of Chloral.

Synonym.—Hydrous Chloral.

$C_2HCl_3O,H_2O.$

Chloral is Chlorinated acet-aldehyde CCl_3COH



Chloral, produced by the action of dry chlorine gas on anhydrous alcohol, purified by treatment, first with sulphuric acid and afterwards with a small quantity of lime, and finally converted into hydrous chloral by the addition of water.

During the first hour or two the alcohol must be kept cool, afterwards gradually warmed till ultimately the boiling point is reached.

Characters and Tests.—In colourless crystals, which do not deliquesce on exposure to air. It has a pungent but not an acrid odour, and a pungent and rather bitter taste. On the gentle application of heat it fuses to a colourless transparent liquid, which, as it cools, begins to solidify at a temperature of about 120° F. (48°·9 C.) It boils in a test-tube, with pieces of broken glass immersed in it, at from 202° to 206° F. (94°·4 to 96°·7 C.), and at a slightly higher temperature it volatilises on platinum foil without residue. Soluble in less than its own weight of distilled water, rectified spirit, or ether, and in four times its weight of chloroform. The aqueous solution is neutral or but slightly acid to test-paper. A solution in chloroform when mixed by agitation with sulphuric acid does not impart colour to the acid. 100 grains of hydrate of chloral dissolved in an ounce of distilled water and mixed with 30 grains of slaked lime, submitted to careful distillation with a suitable apparatus, should yield not less than 70 grains of chloroform. $CCl_3COH + KOH = CHCl_3 + KCHO_2$

The preparation of a considerable quantity occupies several days.

Absence of other organic bodies.

72% is actually formed 2% being dissolved in the water.

Dose.—5 to 30 grains.

Boiled with HNO_3 it is oxidised into $CCl_3\cdot COOH$.

aking suppositories of Chloral hydrate the Butter must not be heated but C. H. beaten with 0·grs C. Butter + moulded.

Preparation.

Syrupus Chloral . 10 grains in 1 fluid drachm.

loral Hydrate dispensed with Sp. Am. co. and allowed to stand a few hours well corked results in an explosion due to the kali decomposing the chloral hydrate with production of $CHCl_3$

When diluted alcohol and chlorinated lime are heated to a temp of 100°F, the hypochlorous acid liberated from the chlorinated lime produces a series of decompositions with the alcohol. Trichloracetic acid is one of the principal products as well as chloral. These react with the slaked lime producing $CHCl_3$. The acid product CCl_3COOH is the cause of the evolution of CO_2; it breaking down into $CHCl_3 + CaCO_3$ the latter being decomposed by HCl + yielding C

$2CH_3CH_2OH + O_2 = 2CH_3COH + 2H_2O$

$CH_3COH + 3Cl_2 = CCl_3 \cdot COH + 3HCl$

$2CCl_3 \cdot COH + Ca(OH)_2 = 2CHCl_3 + Ca(COOH)_2$

$CCl_3 \cdot COOH + Ca(OH)_2 = CHCl_3 + CaCO_3 + H_2O$

CHLOROFORMUM.

Chloroform.

$CHCl_3$.

It may be made as follows:—

Take of

Chlorinated Lime	10 pounds
Rectified Spirit	30 fluid ounces
Slaked Lime	a sufficiency
Water	3 gallons
Sulphuric Acid	a sufficiency
Chloride of Calcium, in small fragments	2 ounces
Quick Lime	½ ounce
Distilled Water	9 fluid ounces
Ethylic Alcohol	a sufficiency

Place the water and the spirit in a capacious still, and raise the mixture to the temperature of 100° F. (37°·8 C.) Add the chlorinated lime and five pounds of the slaked lime, mixing thoroughly. Connect the still with a condensing worm encompassed by cold water, and terminating in a narrow-necked receiver; and apply heat so as to cause distillation, taking care to withdraw the fire the moment that the process is well established. When the distilled product measures fifty ounces, the receiver is to be withdrawn. Pour its contents into a gallon bottle half filled with water, mix well by shaking, and set at rest for a few minutes, when the mixture will separate into two strata of different densities. Let the lower stratum, which constitutes crude chloroform, be washed by agitating it in a bottle with three ounces of the distilled water. Allow the chloroform to subside, withdraw the water, and repeat the washing with the rest of the distilled water, in successive quantities of three ounces at a time. Agitate the washed chloroform for five minutes in a bottle with an equal volume of pure sulphuric acid, allow the mixture to settle, and transfer the upper stratum of liquid to a bottle containing a little alkaline water. After agitation transfer the chloroform to a dry bottle containing the chloride of calcium mixed with half an ounce of quick lime. Mix well

The H_2SO_4 destroys any allylene dichloride or ethyl chloride

? $+C_2H_5OH + 8CaCl_2O_2 = 2CHCl_3 + 3(HCOO)_2Ca + 5CaCl_2 + 8H_2O$.

e sources of $CHCl_3$:- when the following substances are substituted for ohol, chloroform is produced:- Acetone, [illegible] wood naphtha [illegible]. Pure $CHCl_3$ exposed to air yields $COCl_2$, Cl_2 + HCl.

$CHCl_3 + O = COCl_2 + HCl$

$2CHCl_3 + 2O_2 = COCl_2 + H_2O + 2Cl_2 + CO_2$.

by agitation. After the lapse of an hour decant the chloroform into a flask, connect the flask with a Liebig's condenser, and distil over the pure chloroform by means of a water-bath. Add one per cent. by weight of ethylic alcohol. Preserve the product in a cool place, in a bottle furnished with an accurately ground stopper.

The lighter liquid which floats on the crude chloroform after its agitation with water, and the washings with distilled water, should be preserved, and employed in a subsequent operation.

Characters and Tests.—A limpid colourless liquid, of an agreeable ethereal odour, and sweet taste. Dissolves in alcohol and ether in all proportions, and in water to the extent of one volume in two hundred. Specific gravity 1·497. After agitation with sulphuric acid the latter is not coloured to any greater extent than that producible by absolute chloroform to which one per cent. of ethylic alcohol has been added. It leaves no residue and no unpleasant odour after evaporation.

(1) $CHCl_3$ when boiled with Fehling's solution reduces it. (2) Boil + ignite the vapour; burns with a green flame (3) Boil with $NaHO$ acidulate with HNO_3 add sol $AgNO_3$:- white ppt.

Dose.—3 to 10 minims.

Preparations.

Aqua Chloroformi . . .	1 volume in 200
Linimentum Chloroformi . .	1 volume in 2
Spiritus Chloroformi . . .	1 volume in 20
Tinctura Chloroformi Composita .	1 volume in 10
„ „ et Morphinæ.	1 volume in 8

CHRYSAROBINUM.

Chrysarobin.

Synonyms.—Araroba Powder; Goa Powder. N.O. Leguminosae.

The medullary matter of the stem and branches of Andira araroba, *Aguiar.*; *Pharm. Journ.* 3rd ser. vol. x. p. 43, plate; dried, powdered, and purified; containing more or less chrysophanic acid according to age and condition, and yielding much chrysophanic acid by oxidation. Brazil

Characters and Tests.—Commercial chrysarobin, as purified by solvents, occurs as a light brownish-yellow, minutely crystalline powder, tasteless and inodorous. Very sparingly

S.C. Gummy matter, resin, chrysarobin

soluble in water, but almost entirely soluble in 150 parts of hot rectified spirit. On heating it melts and partially sublimes in yellow vapours, leaving a charred residue, which entirely disappears on ignition in air. It dissolves in sulphuric acid to form a yellow to orange-red solution, and in solution of caustic potash to form a yellow to reddish fluorescent solution which becomes carmine by absorption of oxygen from the air.

Dose.—$\frac{1}{6}$ to $\frac{1}{2}$ grain.

Preparation.—Unguentum Chrysarobini.

CIMICIFUGÆ RHIZOMA.

Cimicifuga.

N.O. Ranunculaceæ

Synonym.—Actææ Radix.

The dried rhizome and rootlets of Cimicifuga racemosa, *Elliott* (Actæa racemosa, *Linn.*); *Bentl. and Trim. Med. Pl.* vol. i. plate 8. N. America in rich woodlands westward to E. Kansas.

Characters and Test.—The rhizome is from about two to six inches long, and from half an inch to an inch thick, hard, somewhat flattened-cylindrical in form, having on its upper surface the remains of several aerial stems, and below numerous small wiry brittle branched rootlets, which in commercial specimens are more or less broken off. Both rhizome and rootlets are brownish-black, almost odourless, and of a bitter slightly acrid taste. Their fracture is close, that of the rootlets presenting a thick bark, and a central axis with from three to five, usually four, converging woody wedges, so as to assume a triangular, cross-like, or stellate appearance. An infusion is blackened by a persalt of iron.

Preparations.

Extractum Cimicifugæ Liquidum | Tinctura Cimicifugæ

P.C. A crystalline principle; resins; fat wax tannin starch, sugar, gum.

CINCHONÆ CORTEX.

Cinchona Bark.

N.O. Rubiaceæ.

The dried bark of Cinchona Calisaya, *Weddell*; Cinchona officinalis, *Linn.*; Cinchona succirubra, *Pavon*;

Hab. S. America on the eastern slope of the central chain of the Andes + on the E. slope of the western chain north to Colombia. The plants grow at a high altitude in a climate which is damp + foggy throughout the part of the year. Extensively cultivated in Java, India, Jamaica + to a limited extent in S. America. Nearly all commercial bark is from cultivated trees.

Cinchona lancifolia, *Mutis*; and other species of Cinchona from which the peculiar alkaloids of the bark may be obtained.

Preparations.

Cinchonidinæ Sulphas	Quininæ Hydrochloras
Cinchoninæ Sulphas	,, Sulphas

(Salts of quinine and cinchonine may also be obtained from some species of Remijia, DC.) R. Pedunculata Cuviacea
Sav. Colombia.

CINCHONÆ RUBRÆ CORTEX.

Red Cinchona Bark.

The dried bark of the stem and branches of cultivated plants of Cinchona succirubra, *Pavon*; *Howard's Illustrations, Nueva Quinologia*, plate 7.

Characters.—In quills or more or less incurved pieces, coated with the periderm, and varying in length from usually a few inches to a foot or more—the bark itself from about one-tenth to a quarter of an inch thick, or rarely more; outer surface more or less rough from longitudinal furrows and ridges, or transverse cracks, annular fissures, and warts, and brownish or reddish-brown in colour; inner surface brick-red or deep reddish-brown, irregularly and coarsely striated; fracture nearly close in the smaller quills, but finely fibrous in the larger ones; powder brownish or reddish-brown; no marked odour; taste bitter and somewhat astringent.

Test.—When used for purposes other than that of obtaining the alkaloids or their salts, it should yield between five and six per cent. of total alkaloids, of which not less than half shall consist of quinine and cinchonidine, as estimated by the following methods:—

1. *For Quinine and Cinchonidine.*—Mix 200 grains of red cinchona bark, in No. 60 powder, with sixty grains of hydrate of calcium; slightly moisten the powders with half an ounce of water; mix the whole intimately in a small porcelain dish or mortar; allow the mixture to stand for an hour or two,

The alkaloids exist chiefly as kinates
the Ca(HO)₂ liberates the alkaloids.

(1) The B. A. Alcohol [illegible] the alkaloids

when it will present the characters of a moist, dark brown powder, in which there should be no lumps or visible white particles. Transfer this powder to a six-ounce flask, add three fluid ounces of (1) benzolated amylic alcohol, boil them together for about half an hour, decant and drain off the liquid on to a filter, leaving the powder in the flask; add more of the benzolated amylic alcohol to the powder, and boil and decant as before; repeat this operation a third time; then turn the contents of the flask on to the filter, and wash by percolation with more of the benzolated amylic alcohol until the bark is exhausted. If, during the boiling, a funnel be placed in the mouth of the flask, and another flask filled with cold water be placed in the funnel, this will form a convenient condenser which will prevent the loss of more than a small quantity of the boiling liquid. Introduce the collected filtrate, while still warm, into a stoppered glass separator; add to it twenty minims of diluted (2) hydrochloric acid, mixed with two fluid drachms of water; shake them well together, and when the acid liquid has separated this may be drawn off, and the process repeated with distilled water slightly acidulated with hydrochloric acid, until the whole of the alkaloids have been removed. The acid liquid thus obtained will contain the alkaloids as hydrochlorates, with excess of hydrochloric acid. It is to be carefully and exactly neutralised with ammonia while warm, and then concentrated to the bulk of three fluid drachms. If now about fifteen grains of tartarated soda, dissolved in twice its weight of water, be added to the neutral hydrochlorates, and the mixture stirred with a glass rod, insoluble tartrates of quinine and cinchonidine will separate completely in about an hour; and these collected on a filter, washed, and dried, will contain eight-tenths of their weight of the alkaloids, quinine and cinchonidine, which, divided by 2, represents the percentage of those alkaloids. The other alkaloids will be left in the mother-liquor.

(2) This extracts the alkaloids as hydro-chlorates.

(3) Quinidine
Cinchonine

2. *For total alkaloids.*—To the mother-liquor from the preceding process add solution of ammonia in slight excess. Collect, wash, and dry the precipitate, which will contain the other alkaloids. The weight of this precipitate divided by 2,

and added to the percentage weight of the quinine and cinchonidine, gives the percentage of total alkaloids.

Preparations.

Decoctum Cinchonæ . .	27½ grains to 1 fluid ounce
Extractum Cinchonæ Liquidum	about 1 ounce to 1 fluid ounce
Infusum Cinchonæ Acidum .	22 grains to 1 fluid ounce
Mistura Ferri Aromatica .	1 ounce to 16 fluid ounces
Tinctura Cinchonæ . .	88 grains to 1 fluid ounce
,, ,, Composita	2 ounces to 1 pint

CINCHONIDINÆ SULPHAS.

Sulphate of Cinchonidine.

$(C_{20}H_{24}N_2O)_2,H_2SO_4,3H_2O.$

The sulphate of an alkaloid obtained from the bark of various species of Cinchona. It may be obtained from the mother-liquors of the crystallisation of sulphate of quinine by further concentration, purified by crystallisation from alcohol and finally from hot water.

Characters and Tests.—In colourless silky crystals, usually acicular. Soluble in water, alcohol, or ether; almost insoluble in chloroform or in solution of ammonia; readily soluble in diluted acids. The solution in water has a bitter taste and a neutral or faintly alkaline reaction, twists a ray of polarised light to the left, when acidified is not distinctly fluorescent, gives a white precipitate with chloride of barium. The aqueous solution yields a white precipitate with solution of tartarated soda, and in the filtrate from this mixture solution of ammonia occasions not more than a slight turbidity. It dissolves in pure sulphuric acid with production of not more than a faint yellow coloration, and the fluid undergoes no apparent

Absence of cinchonine

Absence of foreign organic bodies

change when gently warmed. Twenty-five grains of the salt lose 1·76 grain of moisture on drying at 212° F. (100° C.) When ignited in air no ash remains.

Dose.—1 to 10 grains.

CINCHONINÆ SULPHAS.

Sulphate of Cinchonine.

$(C_{20}H_{24}N_2O)_2,H_2SO_4,2H_2O.$

The sulphate of an alkaloid obtained from the bark of various species of Cinchona and Remijia. It may be obtained from the mother-liquors of the crystallisation of the sulphates of quinine, cinchonidine, and quinidine, by precipitating the alkaloid with caustic soda, washing it with spirit until free from other alkaloids, dissolving in sulphuric acid, and, after purifying the solution with animal charcoal, allowing to crystallise.

Characters and Tests.—Hard, colourless, short, prismatic crystals, with a vitreous lustre. Soluble in water and in chloroform, almost insoluble in ether and in solution of ammonia, readily soluble in rectified spirit and in diluted acids. The aqueous solution has a bitter taste, a neutral or faintly alkaline reaction, and twists a ray of polarised light to the right; its acidified solution is not fluorescent, and gives a white precipitate with chloride of barium. It dissolves in pure sulphuric acid without change of colour, and the fluid undergoes no apparent change when gently warmed. Twenty-five grains of the salt should lose 1·26 grain of moisture when dried at 212° F. (100° C.), and should then almost wholly dissolve in four ounces by weight of chloroform. When ignited in air no ash remains.

Dose.—1 to 10 grains.

CINNAMOMI CORTEX.

Cinnamon Bark. N.O. Lauraceæ.

The dried inner bark of shoots from the truncated stocks or stools of the cultivated cinnamon tree, Cinnamomum zeylanicum, *Breyn; Wight, Icon. Plant. Ind. Orient.* plate 123. Imported from Ceylon, and distinguished in commerce as Ceylon Cinnamon.

Characters and Test.—In closely rolled quills, each about three-eighths of an inch in diameter, and containing several smaller quills. It is thin, brittle, splintery, moderately pliable, dull light yellowish-brown externally, and marked by little scars or holes and faint shining wavy lines; darker brown on its inner surface. Odour fragrant; taste warm, sweet, and aromatic. A decoction when cool is not coloured by iodine.

Preparations.

Aqua Cinnamomi	20 ounces to 1 gallon
Decoctum Hæmatoxyli . . .	55 grains to 1 pint
Infusum Catechu	60 grains to 1 pint
Oleum Cinnamomi	
Pulvis Catechu Compositus . .	1 part in 10
,, Cinnamomi Compositus . .	1 part in 3
,, Cretæ Aromaticus . . .	1 part in 12
,, Kino Compositus . . .	1 part in 5
Tinctura Cardamomi Composita .	$\frac{1}{2}$ ounce to 1 pint
,, Catechu	1 ounce to 1 pint
,, Cinnamomi . . .	$2\frac{1}{2}$ ounces to 1 pint
,, Lavandulæ Composita . .	75 grains to 1 pint
Vinum Opii	75 grains to 1 pint

COCA.

Coca.

Synonym.—Cuca. N.O. Erythroxylaceæ.

The dried leaves of Erythroxylon Coca, *Lamarck; Bentl. and Trim. Med. Pl.* vol. i. plate 40. Bolivia & Peru

Cult! in Java.

Characters.—Shortly stalked, oval or lanceolate, of varying thickness, one to two inches or more in length, entire, usually blunt and emarginate, quite smooth; midrib prominent, with numerous faint freely anastomosing lateral veins, and on each side of the midrib a curved line extends from base to apex; green above, somewhat paler beneath. In commercial specimens the leaves are more or less broken, and frequently yellowish-green, yellowish-brown, or brown, and in rare cases the curved lines are indistinguishable. Odour faintly tea-like, especially when bruised; taste somewhat bitter and aromatic.

Dose.—30 to 120 grains.

Preparations.

Extractum Cocæ Liquidum | Cocainæ Hydrochloras

P.C. Cocaine, cocatannic acid.
to 0.5%.

?
Cocaine heated
with HCl yields
benzoic acid.

COCAINÆ HYDROCHLORAS.

Hydrochlorate of Cocaine.

$C_{17}H_{21}NO_4,HCl$.

The hydrochlorate of an alkaloid obtained from the leaves of Erythroxylon Coca, *Lamarck*. It may be obtained by agitating with ether an aqueous solution of an acidulated alcoholic extract, made alkaline with carbonate of sodium; separating and evaporating the ethereal liquid, purifying the product by repeating the treatment with acidulated water, carbonate of sodium, and ether; decolorising; neutralising with hydrochloric acid, and recrystallising.

Characters and Tests.—In almost colourless acicular crystals or crystalline powder, readily soluble in water, soluble in alcohol. Its solution in water has a bitter taste; gives a yellow precipitate with chloride of gold; and a white precipitate with carbonate of ammonium, soluble in excess of the reagent. Its solution produces on the tongue a tingling sensation followed by numbness. The aqueous solution dilates the pupil of the eye. It dissolves without colour in cold concentrated acids, but chars with hot sulphuric acid. The solution yields little or no cloudiness with chloride of barium or oxalate of ammonium. Ignited in the air it burns without residue.

Dose.—$\frac{1}{5}$ to 1 grain.

Preparation.—Lamellæ Cocainæ.

COCCUS.

Cochineal. N.O. Hemiptera.

The dried female insect, Coccus Cacti, *Linn.*, reared on Opuntia cochinillifera, *Mills*; and on other species of Opuntia. Mexico & C. America.

Characters and Test.—About one-fifth of an inch long; somewhat oval in outline, flat or concave beneath, convex above, transversely wrinkled, purplish-black or purplish-grey, easily reduced to powder which is dark red or puce-coloured. When macerated in water no insoluble powder is separated. " Ignited with free access of air, not much more than one per " cent. of ash remains. About 3%.

P.C. 10% Carminic acid
18% Wax & fat.
The wax (coccerin) forms the wool like covering of grey cochineal.

Preparations.

Tinctura	Cardamomi Composita	55 grains to 1 pint
"	Cinchonæ Composita	28 grains to 1 pint
"	Cocci	$2\frac{1}{2}$ ounces to 1 pint

CODEINA.

Codeine.

Synonym.—Codeia.

$C_{18}H_{21}NO_3,H_2O.$

An alkaloid contained in opium and separated from the ammoniacal liquors from which morphine has been obtained, by evaporating, treating the residue with water, precipitating with caustic potash, and purifying the precipitated alkaloid by recrystallisation from ether.

Characters and Tests.—In colourless or nearly colourless octahedral crystals, soluble in eighty parts of water and of solution of ammonia, readily soluble in spirit and in diluted acids. The aqueous solution has a bitter taste and an alkaline reaction. The alkaloid dissolves in sulphuric acid, forming a colourless solution, which, when gently warmed with molybdate of ammonium or a trace of perchloride of iron, assumes a deep blue colour. Moistened with strong nitric acid it becomes yellow but not red. Ignited in air it yields no ash.

Dose.—$\frac{1}{4}$ to 2 grains.

COLCHICI CORMUS.

N.O. Melanthaceæ.

Colchicum Corm.

Indigenous throughout Europe.

The fresh corm of Colchicum autumnale, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 288, collected about the end of June or beginning of July; and the same stripped of its coats, sliced transversely, and dried at a temperature not exceeding 150° F. (65°·5 C.)

Characters.—Fresh corm about one inch and a half long and an inch broad, somewhat conical, flattened on one side where it has a new corm in process of development, and rounded on the other; covered with an outer thin brown membranous coat, and an inner one reddish-yellow; internally white and solid, and when cut yielding a milky juice of a bitter taste and disagreeable odour. Dried slices one-eighth or one-tenth of an inch thick, yellowish at their circumference, moderately indented on one side and convex on the other, so that they are somewhat reniform in outline; the surfaces firm, whitish, amylaceous; breaking readily with a short fracture; taste bitter, no odour.

Dose, in powder.—2 to 8 grains.

Preparations.

Extractum Colchici
,, ,, Aceticum
Vinum Colchici . . . 88 grains to 1 fluid ounce

P.C. Colchicin, 10% starch tannin resin, sugar.

COLCHICI SEMINA.

Colchicum Seeds.

The seeds of Colchicum autumnale, *Linn.*, collected when fully ripe, which is commonly about the end of July or beginning of August; and carefully dried.

Characters.—About one-tenth of an inch in diameter, subglobular, slightly pointed at the hilum, reddish-brown, somewhat rough, very hard and difficult to powder; no odour, taste bitter and acrid. P.C. Colchicin, sugar + a fatty oil.

Preparation.

Tinctura Colchici Seminum . 54½ grains to 1 fluid ounce

COLLODIUM.

Collodion.

Pyroxylin is not soluble in S.V.R. alone. If the preparation is lumpy it may be due to a little cotton or one of the other nitrocelluloses.

Take of

Pyroxylin .	. 1 ounce	or . .	1 part
Ether .	. 36 fluid ounces .	,, . .	36 fluid parts
Rectified Spirit	. 12 fluid ounces .	,, . .	12 fluid parts

Mix the ether and the spirit and add the pyroxylin. Set aside for a few days, and, should there be any sediment, decant the clear solution. Keep it in a well-corked bottle.

Characters.—A colourless highly inflammable liquid with ethereal odour, which dries rapidly upon exposure to the air, and leaves a thin transparent film, insoluble in water or rectified spirit. Contracts on drying.

Preparation.—Collodium Flexile.

COLLODIUM FLEXILE.

Flexible Collodion.

Take of

Collodion .	. 12 fluid ounces . .	or . .	48 fluid parts
Canada Balsam .	½ ounce	,, . .	2 parts
Castor Oil .	. ¼ ounce	,, . .	1 part

Mix, and keep in a well-corked bottle. Does not contract on drying.

A "collodium" is a solution of pyroxylin in an ethereal liquid + usually containing some active principle.

COLLODIUM VESICANS.

Blistering Collodion.

Take of

Blistering Liquid .	20 fluid ounces	. . or . .	20 fluid parts
Pyroxylin . .	1 ounce	. . . . . . ,, . .	1 part

Add the pyroxylin to the liquid in a stoppered bottle, and shake them together until the former is dissolved.

COLOCYNTHIDIS PULPA.

N.O. Cucurbitaceæ. Colocynth Pulp.

The dried peeled fruit, freed from seeds, of Citrullus Colocynthis, *Schrad.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 114. S. + W. Asia N.+ S. Africa Greece Spain.

Characters and Test.—As imported it is usually in more or less broken balls, which are whitish, about two inches or less in diameter, roundish, very light, spongy, tough, and consisting of the pulp in which the seeds are imbedded. The broken-up pulp freed from seeds is the condition in which it is usually supplied to pharmacists, and in which state only is it official. This pulp is light, spongy, whitish, without odour, but with an intensely bitter taste. The powder is not coloured blue by iodine, and does not yield oil when treated with ether and the separated ether evaporated.

Absence of powdered seeds.

Dose, in powder.—2 to 8 grains.

Preparations.

Extractum Colocynthidis Compositum	1 part to 4½, nearly
Pilula Colocynthidis Composita	1 part in 6, nearly
,, ,, et Hyoscyami	1 part in 9, nearly

P.C. ·6% colocynthin, resin pectin gum NO STARCH.

"confection" is a soft paste containing one or more
tive ingredients brought to the proper consistence by
admixture with syrup, honey, or sugar.

CONFECTIO OPII.

Confection of Opium.

Take of

Compound Powder of Opium .	100 grains . . or . . 1 part	
Syrup	300 grains . . ,, . . 3 parts	
Mix.		1 in 40 (of opium).

Dose.—5 to 20 grains.

CONFECTIO PIPERIS.

Confection of Pepper.

Take of

Black Pepper, in fine powder .	2 ounces . . . or . . 2 parts	1 in 10.
Caraway Fruit, in fine powder	3 ounces . . . ,, . . 3 parts	
Clarified Honey . . .	15 ounces . . ,, . . 15 parts	

Rub them well together in a mortar.

Dose.—60 to 120 grains.

CONFECTIO ROSÆ CANINÆ.

Confection of Hips.

Take of

Hips deprived of their seed-like fruits . . .	1 pound . . or . . 1 part
Refined Sugar . . .	2 pounds . . ,, . . 2 parts

Beat the hips to a pulp in a stone mortar, and rub the pulp through a sieve, then add the sugar, and rub them well together. has a tendency to candy on keeping

The sugar in these two confects. + in Conf. Sennae acts as a preservative. This preparation can be distinguished from C. Ros. Gall. by the fact that it contains no tannin.

re
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CONFECTIO ROSÆ GALLICÆ.

Confection of Roses.

Take of

Fresh Red-Rose Petals .	1 pound . . or . . 1 part
Refined Sugar . . .	3 pounds . . ,, . . 3 parts

Cannot be made in an iron mortar on account of the large proportion of tannin.

Beat the petals to a pulp in a stone mortar, add the sugar, and rub them well together. Does not candy, nor ferment nor turn mouldy.

Preparations.

Pilula Aloes Barbadensis	Pilula Aloes Socotrinæ
,, ,, et Asafœtidæ	,, Ferri Carbonatis
,, ,, et Ferri	,, Hydrargyri

Pilula Plumbi cum Opio

CONFECTIO SCAMMONII.

Confection of Scammony.

1 in 3 nearly

Take of

Resin of Scammony, in powder	6 ounces	or	48 parts
Ginger, in fine powder	3 ounces	,,	24 parts
Oil of Caraway	¼ fluid ounce	,,	2 fluid parts
Oil of Cloves	⅛ fluid ounce	,,	1 fluid part
Syrup	6 fluid ounces	,,	48 fluid parts
Clarified Honey	3 ounces	,,	24 parts

Rub the powders with the syrup and the honey into a uniform mass, then add the oils, and mix.

Dose.—10 to 30 grains.

CONFECTIO SENNÆ.

Confection of Senna.

1 in 11.

Take of

Senna, in fine powder	7 ounces
Coriander Fruit, in fine powder	3 ounces
Figs	12 ounces
Tamarind	9 ounces
Cassia Pulp	9 ounces
Prunes	6 ounces
Extract of Liquorice	1 ounce
Refined Sugar	30 ounces
Distilled Water, a sufficiency to make	75 ounces

Boil the figs and prunes gently with twenty-four ounces of distilled water in a covered vessel for four hours, then, having added more distilled water to make up the quantity to its original volume, mix the tamarind and cassia pulp, digest for two hours, and rub the softened pulp of the fruits through a hair sieve, rejecting the seeds and other hard parts. To the pulped product add the sugar and extract of liquorice, and dissolve them with the aid of a little heat; while the mixture '' is still warm, add to it gradually the mixed senna'' and coriander powders, and mix the whole thoroughly, making the weight of the resulting confection seventy-five ounces either by evaporation or by the addition of more distilled water.

'' added last to prevent escape of vol: oil.

Dose.—60 to 120 grains.

CONFECTIO SULPHURIS.

Confection of Sulphur.

1 in 2½

Take of

Sublimed Sulphur .	4 ounces . . . . or	. . 4 parts
Acid Tartrate of Potassium, in powder .	1 ounce . . . . . ,,	. . 1 part
Syrup of Orange Peel .	4 fluid ounces . ,,	. . 4 fluid parts
Tragacanth, in powder .	18 grains . . . . ,,	. . $\frac{1}{24}$ part

Rub them well together.

Dose.—60 to 120 grains.

The addition of Tragacanth stiffens the preparation & prevents separation of the ingredients.

CONFECTIO TEREBINTHINÆ.

Confection of Turpentine.

1 in 4

Take of

Oil of Turpentine .	1 fluid ounce . . or	. . 1 fluid part	
Liquorice Root, in powder .	1 ounce . . . . . ,,	. . 1 part	437.5 grs
Clarified Honey .	2 ounces . . . . . ,,	. . 2 parts	875 grs.

Rub the oil of turpentine with the liquorice, add the honey, and mix to a uniform consistence.

If turpentine separates before it [illegible], & readd with slight trituration but do not use pressure.

Dose.—60 to 120 grains.

CONII FOLIA.

N. O. Umbelliferæ.

Hemlock Leaves.

The fresh leaves and young branches of Conium maculatum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 118; gathered from wild British plants when the fruit begins to form. Hab: Asia & Europe.

Characters and Test.—More or less divided in a pinnate manner, the lower leaves decompound and sometimes two feet in length, glabrous, and arising from a smooth stem, which is marked with dark purple spots, by clasping petioles of varying lengths, those of the lower leaves being hollow. Odour strong and very disagreeable, more especially when rubbed with solution of potash.

Dose, in powder.—2 to 8 grains.

Preparations.

Extractum Conii | Succus Conii

P.C. A minute quantity of conine; vol: oil. albumen ~~combined~~ combined with malic acid.

CONII FRUCTUS.

Hemlock Fruit.

The fruit of Conium maculatum, *Linn.*, gathered when fully developed, but while still green, and carefully dried.

Characters and Test.—About one-eighth of an inch long, broadly ovoid, somewhat compressed laterally, and crowned by the depressed stylopod, dull greenish-grey. As met with in commerce, it consists usually of the separated mericarps, each of which presents five prominent more or less crenated ridges, with the furrows smooth, and without evident vittæ. Reduced to powder and rubbed with solution of potash, it gives out a very strong and disagreeable odour.

Preparation.—Tinctura Conii, 54½ grains to 1 fluid ounce.

P.C. ·2 to ·5% of conine } little vol: oil; fixed oil; 6% ash.
= combined with malic acid }

COPAIBA.

Copaiva or Copaiba. N.O. Leguminosæ.

The oleo-resin obtained by cutting deeply or boring into the trunk of Copaifera Langsdorffii, *Desf.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 93; and other species of Copaifera, *Linn.* Brazil: C. officinalis Venezuela + New granada.

Characters and Tests.—A more or less viscid liquid; generally transparent and not fluorescent, but some varieties are opalescent and occasionally slightly fluorescent; light yellow to pale golden brown, having a peculiar aromatic odour, and a persistent acrid somewhat bitter taste. Its specific gravity varies from 0·940 to about 0·993. A small quantity heated until all volatile oil is removed yields a residue which when cold is hard, and, generally, easily rubbed to powder; and the oil volatilised during the operation does not smell of turpentine. Almost entirely soluble in absolute alcohol, and in four times its bulk of petroleum spirit, the latter solution only yielding a filmy deposit on standing.

indicating abs. of turpentine.

absence of Gurjun oil balsam

Dose.—½ to 1 fluid drachm.

Preparation.—Oleum Copaibæ $C_{15}H_{24}$

P.C. a bitter principle, resins copaivic acids.

CORIANDRI FRUCTUS.

Coriander Fruit. N.O. Umbelliferæ.

The dried ripe fruit of Coriandrum sativum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 133. Hab: C. Asia; S. Europe.

Characters.—Nearly globular, and consisting of two closely united hemispherical mericarps, crowned by the calyx teeth and stylopod, about one-fifth of an inch in diameter, brownish-yellow, hard, faintly ribbed with both primary and secondary ridges, the two mericarps enclosing a lenticular cavity, and each furnished on its commissural surface with two brown vittæ. It has an agreeable mild aromatic taste, and when bruised a pleasant odour.

Preparations.

Confectio Sennæ . . .	1 part in 25
Oleum Coriandri	yield ½ – 1%
Syrupus Rhei	
Tinctura Rhei	¼ ounce to 1 pint
„ Sennæ . . .	½ ounce to 1 pint

P.C. Besides vol: oil 13% fat; mucilage; 5% ash

CREASOTUM.

Creasote.

Its main constituent is guaiacol $C_7H_8O_2$ (90%) $C_6H_4(OH)(OCH_3)$

Powd. curd soap 1
P. glycyr 5
3 grs of this will make good mass with mi creasote

A product of the distillation of wood tar.

Characters and Tests.—A liquid, colourless, or with a yellowish tinge, and a strong empyreumatic odour. It is sparingly dissolved by water, but freely by alcohol, ether, and glacial acetic acid. Specific gravity 1·071. It does not coagulate albumen. Dropped on white filtering paper and exposed to a temperature of 212° F. (100° C.), it leaves no translucent stain. It turns the plane of polarisation of a ray of polarised light to the right. It is not solidified by the cold produced by a mixture of hydrochloric acid and sulphate of sodium. It is miscible with collodion without production of any precipitate. An aqueous solution (one per cent.) with a drop of a dilute neutral solution of ferric chloride yields a green coloration, rapidly changing to a reddish-brown, and, unless the mixture is very dilute, giving a reddish-brown precipitate.

Indicating absence of carbolic acid

Absence of coal tar creasote

Dose.—1 to 3 drops.

Preparations.

Mistura Creasoti . .	1 minim in 1 fluid ounce
Unguentum Creasoti . .	1 part in 9
Vapor Creasoti	

Wood Tar is fractionally distilled + middle oil is collected. This agitated with very dilute acid to remove any basic substan It is then again fractionally distilled from Na_2CO_3 and the pure creasote distils over between 190°C + 210°C.

CRETA.

Chalk.

Native friable carbonate of calcium.

Preparation.—Creta Præparata.

Used in producing carbonic acid gas.

CRETA PRÆPARATA.

Prepared Chalk.

Chalk, freed from most of its impurities by elutriation, and afterwards dried in small masses, which are usually of a conical form, by the process known as "trochiscation". (The grittiness is due to silica.

Characters and Tests.—A white amorphous substance, effervescing with acids, and dissolving, with only a slight residue, in diluted hydrochloric acid. This solution, when supersaturated with solution of ammonia, gives, upon the addition of oxalate of ammonium, a copious white precipitate. The salt formed by dissolving the prepared chalk in hydrochloric acid, if rendered neutral by evaporation to dryness and then redissolved in water, gives only a very scanty precipitate on the addition of saccharated solution of lime.— absence of Alumina, Magnesia, Ferric oxide, + phosphates.

Dose.—10 to 60 grains.

Preparations.

Hydrargyrum cum Creta	2 parts in 3
Mistura Cretæ	1 part in 34
Pulvis Cretæ Aromaticus	1 part in 4
,, ,, ,, cum Opio	1 part in 4, nearly

CROCUS.

Saffron.

The dried stigmas and top of the style of Crocus sativus, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 274. Indigenous to Persia + Asia Minor. Largely cultd at Alicante in Spain; Gâtinais in France; also in Italy + Austria.

Characters and Tests.—Each entire portion of commercial saffron is an inch or somewhat more in length; it consists of three thread-like orange-red stigmas, thickened and tubular above, and jagged or notched at their extremities, and united below to the top of the yellow style. It is flexible, unctuous to the touch, with a peculiar strong aromatic odour, and a bitter somewhat aromatic taste. Rubbed on the wet finger it leaves an intense orange-yellow tint. When pressed between folds of white filtering paper, it leaves no oily stain. When a small portion is placed in a glass of warm water it colours the liquid orange-yellow, but should not deposit any white or coloured powder. Ignited with free access of air, it yields about six per cent. of ash.

Preparations.

Decoctum Aloes Compositum	2·2 grains to 1 fluid ounce
Pilula Aloes et Myrrhæ	1 part in 12
Pulvis Cretæ Aromaticus	1 part in 16, nearly
Tinctura Cinchonæ Composita	55 grains to 1 pint
,, Croci	1 ounce to 1 pint
,, Opii Ammoniata	180 grains to 1 pint
,, Rhei	$\frac{1}{4}$ ounce to 1 pint

P.C. Essential Oil, Crocin, Picrocrocin
Fat Wax + albumen.

CUBEBA.

Cubebs.

N.O. Piperaceæ.

The dried unripe full-grown fruit of Piper Cubeba, *Linn. fil.* (Cubeba officinalis, *Miquel*); *Bentl. and Trim. Med. Pl.* vol. iv. plate 243. Java; Sumatra

Characters and Test.—Globular, about one-sixth of an inch in diameter, blackish- or greyish-brown, much wrinkled, and tapering below into a rounded stalk which is continuous with, and permanently attached to, the pericarp. Beneath the shrivelled skin is a hard brown smooth shell in which the seed is contained in the mature fruit, but in commercial cubebs this seed is mostly so little developed that the pericarp is nearly empty. Taste warm, aromatic, and somewhat bitter;

P.C. 5 to 15% Essential Oil. 3% Resin
a crystalline substance cubebin .5 to 2.5% }; cubebic acid; gum + a fixed oil.

odour strong, peculiar, and aromatic. A decoction when cold is coloured bright indigo-blue by solution of iodine.

Dose, in powder.—30 to 120 grains.

Preparations.

Oleo-resina Cubebæ
Oleum Cubebæ
Tinctura Cubebæ . . . 2½ ounces to 1 pint

CUPRI NITRAS.

Nitrate of Copper.

Synonym.—Cupric Nitrate.

$Cu(NO_3)_2,3H_2O$.

May be obtained by dissolving copper in diluted nitric acid and evaporating the solution until crystallisation takes place on cooling to a temperature not lower than 70° F. (21°·1 C.)

Characters and Tests.—Deep blue prismatic crystals, very deliquescent, highly corrosive. With one-third of its weight of water it forms, at a temperature below 70° F. (21°·1 C.) tabular crystals, $Cu(NO_3)_2,6H_2O$. With a very little more water, added directly or absorbed from the air, it yields a styptic, caustic, corrosive fluid. The diluted aqueous solution is only faintly acid to litmus; gives a maroon-red precipitate with ferrocyanide of potassium; affords a violet-blue solution with excess of ammonia; and on the addition of two or three crystals of sulphate of iron and a few drops of sulphuric acid yields a black zone round the crystals.

$3 Cu_2 + 16 HNO_3 + 10 H_2O = 6 Cu(NO_3)_2 \cdot 3H_2O + 4NO$

CUPRI SULPHAS.

Sulphate of Copper.

$CuSO_4,5H_2O$.

May be obtained by heating sulphuric acid and copper together, dissolving the soluble product in hot water, and

$Cu + 2 H_2SO_4 = Cu.SO_4 + SO_2 + 2 H_2O$

evaporating the solution until crystallisation takes place on cooling; or by dissolving black oxide of copper in hot diluted sulphuric acid, filtering, evaporating, and crystallising. $4H_2O + CuO + H_2SO_4 = CuSO_4 \cdot 5H_2O.$

Characters and Tests.—A blue crystalline salt, in oblique prisms, soluble in water, forming a pale blue solution which strongly reddens litmus. The aqueous solution gives with chloride of barium a white precipitate insoluble in hydrochloric acid, and a maroon-red precipitate with ferrocyanide of potassium. If an aqueous solution of the salt be mixed with twice its volume of solution of chlorine, and solution of ammonia be added, the precipitate formed by the first addition of the ammonia will be dissolved by a further and sufficient addition of the alkali, and a violet-blue solution will be produced, leaving little or nothing undissolved.

Absence of more than traces of Fe.

Dose.—As an astringent, ¼ to 2 grains; as an emetic, 5 to 10 grains.

CUPRUM.

Copper.

Fine copper wire, about No. 25 wire gauge, or about 0·02 inch.

Preparations containing Copper.

Cupri Nitras | Cupri Sulphas

Preparation for which Copper is used.

Spiritus Ætheris Nitrosi

CUSPARIÆ CORTEX.

Cusparia Bark.

N. O. Rutaceæ.

The dried bark of Galipea Cusparia, *St. Hilaire*; *Bentl. and Trim. Med. Pl.* vol. i. plate 43. N. & S. America.

Characters and Test.—In flattish or curved pieces, or in quills, six inches or less in length; the bark itself commonly not more than one-sixth of an inch thick, and obliquely cut on its inner edge. Coated externally with a yellowish-grey mottled corky layer, which may usually be scraped off by the nail, the exposed surface then presenting a dark brown resinous appearance; inner surface light brown, flaky, and occasionally with strips of the wood attached; fracture short and resinous, and exhibiting, more especially when examined by a magnifying lens, numerous white points or lines. Taste bitter and somewhat aromatic; odour musty and disagreeable. The fractured surface touched with nitric acid does not become of an arterial blood-red colour.

crystals of Calcium oxalate

Distinction from Strychnos Nux Vom.

Preparation.

Infusum Cuspariæ . . . 1 ounce to 1 pint

P.C. Four alkaloids; a glucoside, Vol: oil ·5 to 1·5 %.

CUSSO.

Kousso.

N. O. Rosaceæ.

The dried panicles (chiefly of the female flowers) of Hagenia abyssinica, *Willd.* (Brayera anthelmintica, *Kunth*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 102. Abyssinia.

Characters.—In compressed clusters or more or less cylindrical rolls, usually ten inches or more in length, or the panicles are broken up into small fragments; brownish or greenish-brown, or reddish in the case of the female flowers; odour herby, tea-like; taste bitter, acrid, and disagreeable. The separate panicles are much branched, zigzag, more or less covered with hairs and glands, and with a large sheathing bract at the base of every branch. Flowers numerous, small, shortly stalked, unisexual, with two roundish membranous veiny bracts at the base of each flower, which are brownish-yellow in the male, and tinged with red in the female flowers; calyx hairy externally, veiny, with ten segments in two alternating whorls.

P.C. 2·4 % Tannin; 6½ % Bitter acrid resin

Dose.—¼ to ½ ounce.

Little Vol: Oil.

Preparation.

Infusum Cusso . . ¼ ounce to 4 fluid ounces

A "Decoction" is a liquid preparation made by boiling the drug with water & straining.

An excellent excipient for most pills containing aloes but must be avoided where the alkali would proove incompatible

DECOCTUM ALOES COMPOSITUM.

Compound Decoction of Aloes.

Take of

Extract of Socotrine Aloes	½ ounce
Myrrh Saffron Carbonate of Potassium	of each ¼ ounce
Extract of Liquorice	2 ounces
Compound Tincture of Cardamoms	15 fluid ounces
Distilled Water	a sufficiency to make 50 fluid ounces

The K_2CO_3 forms a soap with the acid resin (myrrhic acid) of the myrrh which helps to suspend insol: matter

Reduce the extract of aloes and the myrrh to coarse powder, and put them together with the carbonate of potassium and extract of liquorice into a suitable covered vessel with a pint of distilled water; boil gently for five minutes, then add the saffron. Let the vessel with its contents cool, then add the tincture of cardamoms, and, covering the vessel closely, allow the ingredients to macerate for two hours; finally, strain through flannel, pouring as much distilled water over the contents of the strainer as will make the strained product measure fifty fluid ounces.

This preparation should be kept in vessels from which air is excluded as far as possible.

Dose.—½ to 2 fluid ounces.

DECOCTUM CETRARIÆ.

Decoction of Iceland Moss.

Take of

Iceland Moss	1 ounce
Distilled Water	1 pint

Wash the moss in cold water, to remove impurities; boil it with the distilled water for ten minutes in a covered vessel, and strain, with gentle pressure, while hot; then pour distilled water over the contents of the strainer until the strained product measures a pint.

Dose.—1 to 4 fluid ounces.

y 50% of the
constituents are
to
e.

DECOCTUM CINCHONÆ.

Decoction of Cinchona.

Take of

Red Cinchona Bark, in No. 20 powder	1¼ ounce
Distilled Water	1 pint

Boil for ten minutes in a covered vessel. Strain the decoction, when cold, and pour as much distilled water over the contents of the strainer as will make the strained product measure one pint. This dec: is strained cold because the cinchona red of the bark is soluble in hot but insol in cold water.

Dose.—1 to 2 fluid ounces.

DECOCTUM GRANATI RADICIS.

Decoction of Pomegranate Root.

This is boiled longer than any other B.P. Dec.

Take of

Pomegranate Root Bark, sliced	2 ounces
Distilled Water	2 pints

Boil down to a pint, and strain, making the strained product up to a pint, if necessary, by pouring distilled water over the contents of the strainer.

Dose.—2 to 4 fluid ounces.

DECOCTUM HÆMATOXYLI.

Decoction of Logwood.

Take of

Logwood, in chips	1 ounce
Cinnamon Bark, bruised	55 grains
Distilled Water	1 pint

Boil the logwood in the water for ten minutes in a covered vessel, adding the cinnamon towards the end.(1) Strain the decoction, and pour as much distilled water over the contents of the strainer as will make the strained product measure a pint.

(1) To avoid the loss of the ess: oil.

Dose.—1 to 2 fluid ounces.

DECOCTUM HORDEI.

Decoction of Barley.

Take of

Pearl Barley	2 ounces
Distilled Water	1½ pint

Wash the barley in cold water, and reject the washings; boil the washed barley with the distilled water for twenty minutes in a covered vessel, and strain. Product, about one pint.

Dose.—1 to 4 fluid ounces.

DECOCTUM PAPAVERIS.

Decoction of Poppy.

N.B. The only preparation of poppies where the seeds are not ordered to be removed.

Take of

Poppy Capsules, bruised	2 ounces
Distilled Water	1½ pint

Boil for ten minutes in a covered vessel, then strain, and pour as much distilled water over the contents of the strainer as will make the strained product measure a pint.

DECOCTUM PAREIRÆ.

Decoction of Pareira.

Take of

Pareira Root, in No. 20 powder	1¼ ounce
Distilled Water	1 pint

Boil for fifteen minutes in a covered vessel, then strain, and pour as much distilled water over the contents of the strainer as will make the strained product measure a pint.

Dose.—1 to 2 fluid ounces.

DECOCTUM QUERCÛS.

Decoction of Oak Bark.

Take of

Oak Bark, bruised	1¼ ounce
Distilled Water	1 pint

Boil for ten minutes in a covered vessel, then strain, and pour as much distilled water over the contents of the strainer as will make the strained product measure a pint.

Dose.—1 to 2 fluid ounces.

DECOCTUM SARSÆ.

Decoction of Sarsaparilla.

8

Take of

Jamaica Sarsaparilla, cut transversely (1) .	2½ ounces
Boiling Distilled Water	1½ pint

(2 Digest the sarsaparilla in the water for an hour, then boil for ten minutes in a covered vessel, cool and strain, pouring distilled water, if required, over the contents of the strainer, or otherwise making the strained product measure a pint.

Dose.—2 to 10 fluid ounces.

DECOCTUM SARSÆ COMPOSITUM.

Compound Decoction of Sarsaparilla.

Take of

Jamaica Sarsaparilla, cut transversely (1) .	2½ ounces
Sassafras Root, in chips Guaiacum Wood turnings Dried Liquorice Root, bruised } of each .	¼ ounce
Mezereon Bark	⅛ ounce
Boiling Distilled Water	1½ pint

(2) Digest the solid ingredients in the water for an hour, then boil for ten minutes in a covered vessel; cool and strain, pouring distilled water, if required, over the contents of the strainer, or otherwise making the strained product measure a pint.

Dose.—2 to 10 fluid ounces.

(1) To avoid as much as possible solution of the starch.

(2) The active principles are more easily dissolved after the pores of the wood have been opened by the boiling water.

DECOCTUM SCOPARII.

Decoction of Broom.

Take of

Broom Tops, dried	1 ounce
Distilled Water	1 pint

Boil for ten minutes in a covered vessel, then strain, and pour as much distilled water over the contents of the strainer as will make the strained product measure a pint.

Dose.—2 to 4 fluid ounces.

DECOCTUM TARAXACI.

Decoction of Dandelion.

Take of

Dried Dandelion Root, sliced and bruised .	1 ounce
Distilled Water	1 pint

Boil for ten minutes in a covered vessel, then strain, and pour as much distilled water over the contents of the strainer as will make the strained product measure a pint.

Dose.—2 to 4 fluid ounces.

DIGITALIS FOLIA.

Foxglove Leaves.

N.O. Scrophulariaceæ.

The leaves of Digitalis purpurea, *Linn.*; *Woodv. Med. Bot.* plate 24. Collected from wild British plants of the second year's growth when about two-thirds of the flowers are expanded, and carefully dried.

Characters.—From four to twelve or more inches in length, and sometimes as much as five or six inches broad, with a winged petiole of varying length; ovate or ovate-lanceolate, subacute, crenate or irregularly crenate-dentate, somewhat rugose, slightly hairy and dull-green above, densely pubescent and paler beneath. Taste very bitter, unpleasant; odour faint, agreeable, and tea-like.

Dose, in powder.—½ to 1½ grain.

Preparations.

Infusum Digitalis . .	3 grains to 1 fluid ounce, nearly
Tinctura Digitalis . .	54½ grains to 1 fluid ounce

P.C. Digitalin, which is a mixture of several compds, resin, inosit, pectin &c.

ECBALLII FRUCTUS.

Squirting Cucumber Fruit.

Synonym.—Elaterii Fructus. N.O. Cucurbitaceæ.

The fruit, very nearly ripe, of Ecballium Elaterium, *A. Richard.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 115. From plants cultivated in Britain. Hab. W. Asia N. Africa + S. Europe

Preparation.—Elaterium.

ELATERINUM.

Elaterin.

$C_{20}H_{28}O_5$.

The active principle of elaterium. It may be obtained by exhausting elaterium with chloroform, adding ether to the chloroformic solution, collecting the precipitate, washing the latter with ether, and purifying by recrystallisation from chloroform.

Characters and Tests.—A chemically neutral substance. In small colourless crystals; insoluble in water, sparingly soluble in rectified spirit. It has a bitter taste. Heated with access of air, it first melts and then burns, leaving no residue. With melted carbolic acid it yields a solution which, on the addition of sulphuric acid, acquires a crimson colour rapidly changing to scarlet. It is not precipitated from solution by tannic acid, nor by the salts of mercury or of platinum.

Dose.—$\frac{1}{40}$ to $\frac{1}{10}$ grain.

Preparation.—Pulvis Elaterini Compositus.

ELATERIUM.

Elaterium.

Synonym.—Extractum Elaterii.

A sediment from the juice of the Squirting Cucumber fruit.

Take of
Squirting Cucumber Fruit, very nearly ripe . 1 pound

Cut the fruit lengthwise, and lightly press out the juice. Strain it through a hair-sieve, and set it aside to deposit. Carefully pour off the supernatant liquid; pour the sediment on a linen filter; and dry it on porous tiles in a warm place. The decanted fluid may deposit a second portion of sediment, which can be dried in the same way.

Absence $CaCO_3$

Absence of starch

Characters and Tests.—In light friable flat or slightly curved opaque cakes, about one-tenth of an inch thick; pale green, greyish-green, or yellowish-grey, according to age; fracture finely granular; odour faint, tea-like, taste bitter and acrid. Does not effervesce with acids; boiled with water and the cooled mixture treated with iodine, affords little or no blue colour; yields half its weight to boiling rectified spirit. Treated by the method described for 'Elaterin,' it should yield twenty-five per cent., or not less than twenty per cent., of that substance.

P.C. Elaterin 25-33%
Chlorophyll 8-10% Ash.

Dose.—$\frac{1}{16}$ to $\frac{1}{2}$ grain.

Preparation.—Elaterinum.

ELEMI.

N.O. Burseraceæ

Manila Elemi.

A concrete oleo resinous exudation, the botanical source of which is undetermined but is sometimes referred to Canarium commune, *Linn.*; *Rumph. Amb.* vol. ii. plate 47.

Philippine Islands.

mplastrum. An adhesive substance spread upon
ther or some other suitable material designed to obtain
cal or slow constitutional action by adhesion to the body.

Characters.—When fresh, soft, granular, resinous, and colourless, but by keeping it becomes harder, and of a pale yellow tint. Odour strong and fragrant, somewhat resembling fennel and lemon. Moistened with rectified spirit, it breaks up into small particles, which, when examined by the microscope, are seen partly to consist of acicular crystals. (amyrin)

Preparation.

Unguentum Elemi . . . . 1 part in 5

P.C. 10 % Vol: oil ; 60 % brein (amorphous resin)
25 % Amyrin (cryst. from hot alcohol.

EMPLASTRUM AMMONIACI CUM HYDRARGYRO.

Ammoniacum and Mercury Plaster.

Ammoniacum 12 in 15.
Mercury 1 in 5.

Take of			
Ammoniacum	12 ounces	or	656 parts
Mercury	3 ounces	,,	164 parts
Olive Oil	56 grains	,,	7 parts
Sublimed Sulphur	8 grains	,,	1 part

Heat the oil, and add the sulphur to it gradually, stirring till they unite. With this mixture triturate the mercury, until globules are no longer visible; and, lastly, add the ammoniacum, previously liquefied, mixing the whole carefully.

A little HgS is formed which produces "flouring" of the mercury, i.e. loss of fluidity.

EMPLASTRUM BELLADONNÆ.

Belladonna Plaster.

1 in 5.

Take of			
Alcoholic Extract of Belladonna	4 ounces	or	1 part
Resin Plaster Soap Plaster } of each	8 ounces	,,	2 parts

Melt the plasters by the heat of a water-bath, then add the extract, and mix the whole thoroughly together.

Must be as cool as possible before adding the extract because of injury to alkaloids.

EMPLASTRUM CALEFACIENS.

Cantharides 1 in 24 (nearly)

Warming Plaster.

Synonym.—Warm Plaster.

Take of

Cantharides, in coarse powder Expressed Oil of Nutmeg Yellow Wax Resin	of each	4 ounces	or	1 part
Resin Plaster		3¼ pounds	,,	13 parts
Soap Plaster		2 pounds	,,	8 parts
Boiling Water		1 pint	,,	5 fluid parts

Infuse the cantharides in the boiling water for six hours; squeeze strongly through calico, and evaporate the expressed liquid by a water-bath till reduced to one third. Then add the other ingredients, and melt in a water-bath, stirring well until the whole is thoroughly mixed.

EMPLASTRUM CANTHARIDIS.

1 in 3.

Cantharides Plaster.

Take of

Cantharides, in powder		12 ounces	or	4 parts
Yellow Wax Prepared Suet	of each	7½ ounces	,,	2½ parts
Prepared Lard		6 ounces	,,	2 parts
Resin		3 ounces	,,	1 part

Liquefy the wax, suet, and lard together by a water-bath, and add the resin, previously melted; then introduce the cantharides, mix the whole thoroughly, and continue to stir the mixture while it is allowed to cool.

EMPLASTRUM FERRI.

Chalybeate Plaster.

1 in 11

Take of

Peroxide of Iron, in fine powder	1 ounce	or	1 part
Burgundy Pitch	2 ounces	,,	2 parts
Lead Plaster	8 ounces	,,	8 parts

Take care to avoid lumps.

Add the peroxide of iron to the Burgundy pitch and lead plaster, previously melted together, and stir the mixture constantly till it stiffens on cooling.

EMPLASTRUM GALBANI.

Galbanum Plaster.

1 in 11.

Take of

Galbanum Ammoniacum Yellow Wax — of each	1 ounce	or	1 part
Lead Plaster	8 ounces	,,	8 parts

Melt the galbanum and ammoniacum together, and strain; then add the mixture to the lead plaster and wax, also previously melted together, and mix the whole thoroughly.

EMPLASTRUM HYDRARGYRI.

Mercurial Plaster.

1 in 3.

Take of

Mercury	3 ounces	or	164 parts
Olive Oil	56 grains	,,	7 parts
Sublimed Sulphur	8 grains	,,	1 part
Lead Plaster	6 ounces	,,	328 parts

Heat the oil and add the sulphur to it gradually, stirring until they unite; with this mixture triturate the mercury until globules are no longer visible, then add the lead plaster, previously liquefied, and mix the whole thoroughly.

1 in 10

EMPLASTRUM OPII.

Opium Plaster.

Take of

Opium, in the finest powder	1 ounce	.. or .. 1 part
Resin Plaster	9 ounces	.. ,, .. 9 parts

Melt the resin plaster by means of a water-bath; then add the opium by degrees, and mix thoroughly.

EMPLASTRUM PICIS.

Pitch Plaster.

1 in 2 (nearly).

gives colour + consistence.

Take of

Burgundy Pitch	26 ounces	... or .. 26 parts
Common Frankincense	13 ounces	... ,, .. 13 parts
Resin Yellow Wax } of each	4½ ounces	... ,, .. 4½ parts
Expressed Oil of Nutmeg	1 ounce	.... ,, .. 1 part
Olive Oil Water } of each	2 fluid ounces	. ,, .. 2 fluid parts

Use a fairly large capsule + be careful the contents do not froth over after adding the latter ingredients.

Add the oils and the water to the frankincense, Burgundy pitch, resin, and wax, previously melted together; then, constantly stirring, evaporate to a proper consistence.

EMPLASTRUM PLUMBI.

Lead Plaster.

Best Italian oil should be used. Inferior oils do not give the necessary adhesiveness.

Take of

Oxide of Lead, in fine powder	5 pounds	.. or .. 5 parts
Olive Oil	10 pounds	.. ,, .. 10 parts
Water	5 pounds	.. ,, .. 5 parts

Oleate + Stearate of lead are formed with glycerine

Boil all the ingredients together gently by the heat of a steam-bath, and keep them simmering for four or five hours, stirring constantly until the product acquires a proper consistence for a plaster, and adding more water during the process if necessary.

$2C_3H_5 3C_{18}H_{33}O_2 + 3PbO + 3H_2O = 3Pb(C_{18}H_{33}O_2)_2 + 2C_3H_5(HO)_3$.

The ingredients are boiled until PbO + Olive oil have thoroughly combined + no pinkish tinge can be distinguish

The plaster is then cooled, separated from water + dri to remove remainder of water.

Preparations.

Emplastrum Ferri
,, Galbani
,, Hydrargyri

Emplastrum Plumbi Iodidi
,, Resinæ
,, Saponis

EMPLASTRUM PLUMBI IODIDI.

Iodide of Lead Plaster.

1 in 10.

Take of

Iodide of Lead	2 ounces	or	1 part
Lead Plaster	1 pound	,,	8 parts
Resin	2 ounces	,,	1 part

Add the iodide of lead in fine powder to the plaster and resin previously melted at as low a temperature as possible, and mix them intimately. Add the Iodide as the plaster cools. If added when hot the iodide will be reduced.

EMPLASTRUM RESINÆ.

Resin Plaster.

Synonym.—Adhesive Plaster. 1 in 9½.

Take of

Resin	4 ounces	or	2 parts
Lead Plaster	2 pounds	,,	16 parts
Curd Soap	2 ounces	,,	1 part

To the lead plaster, previously melted at a low temperature, add the resin and soap, first liquefied, and stir them until they are thoroughly mixed.

Preparations.

Emplastrum Belladonnæ
Emplastrum Calefaciens
Emplastrum Opii

EMPLASTRUM SAPONIS.

Soap Plaster.

1 in 7 (nearly)

Take of

Curd Soap	6 ounces	or	6 parts
Lead Plaster	2¼ pounds	,,	36 parts
Resin	1 ounce	,,	1 part

To the lead plaster, melted at a low temperature, add the soap and the resin, first liquefied; then, constantly stirring, evaporate to a proper consistence.

Preparations.

Emplastrum Belladonnæ	Emplastrum Calefaciens

EMPLASTRUM SAPONIS FUSCUM.

Brown Soap Plaster.

Have all the ingredients at hand before commencing manipulation.

Synonym.—Emplastrum Cerati Saponis.

1 of $Pb C_2 H_3 O_2$ in 2 (nearly)
1 " Curd Soap 6¼ "

Take of

Curd Soap, in powder	10 ounces	or	10 parts
Yellow Wax	12½ ounces	,,	12½ parts
Olive Oil	1 pint	,,	20 fluid parts
Oxide of Lead	15 ounces	,,	15 parts
Vinegar	1 gallon	,,	160 fluid parts

If not constantly stirred a basic insoluble acetate is formed.

Evap. till reduced to about ½. Till about semi-solid.

Boil the vinegar and oxide of lead together, by the heat of a steam-bath, constantly stirring them until the oxide has combined with the acid; then add the soap and boil again until most of the moisture is evaporated; finally, add the wax and oil melted together, and stir the whole continuously, maintaining the heat until by the evaporation of the remaining moisture the product has acquired the proper consistence for a plaster.

Stearate lead & acetate soda are formed

Have the wax & oil hot, or on mixing the wax will separate. The mass will froth when this is added.

ENEMA ALOES.

Enema of Aloes.

Triturate the Aloes & Pot. Carb well together, & carefully incorporate the mucilage being careful to avoid lumps.

Take of

Aloes	40 grains
Carbonate of Potassium	15 grains
Mucilage of Starch	10 fluid ounces

Mix, and rub together.

Enema is a liquid preparation for administra
on per rectum.

ENEMA ASAFŒTIDÆ.

Enema of Asafœtida.

Use picked asafoetida. Triturate well with 10 ♏ of water at a time until the gum resin is thoroughly reduced. Then add the remainder of the water stirring constantly.

Take of

Asafœtida	30 grains
Distilled Water	4 fluid ounces

Rub the asafœtida in a mortar with the water added gradually, so as to form an emulsion.

ENEMA MAGNESII SULPHATIS.

Enema of Sulphate of Magnesium.

Take of

Sulphate of Magnesium	1 ounce
Olive Oil	1 fluid ounce
Mucilage of Starch	15 fluid ounces

Dissolve the sulphate of magnesium in the mucilage of starch, add the oil, and mix. These directions give a poor result. better method is to dissolve the Mag. Sulph. in 2½ ozs of water. Make mucilage with 180 grs of starch & the remaining 7½ ozs of water, with incorporate the oil; finally add by degrees the solution of Magnes: Sulph:

ENEMA OPII.

Enema of Opium.

Take of

Tincture of Opium	½ fluid drachm
Mucilage of Starch	2 fluid ounces

Mix. This enema is intended to be retained for some time in the bowels, hence only a small quantity is ordered.

ENEMA TEREBINTHINÆ.

Enema of Turpentine.

Take of

Oil of Turpentine	1 fluid ounce
Mucilage of Starch	15 fluid ounces

Mix.

ERGOTA.

Sub. division
N.O. Fungi.

Ergot.

N.O. Graminaceae

Collected chiefly in Spain & S. Russia.

The sclerotium of Claviceps purpurea, *Tulasne*, produced between the pales, and replacing the grain of Secale cereale, *Linn.*; *Tulasne, Ann. Sci. Nat.* vol. xx. ser. 3 (1853), plates 1–3.

Characters.—Subcylindrical or obscurely triangular, tapering towards the ends, generally arched or curved; from one-third of an inch to an inch and a half in length; longitudinally furrowed on each side, but more especially on that which is concave, and often irregularly cracked; violet-purple externally, whitish or pinkish-white within; fracture short. Odour peculiar and disagreeable, more especially if the powder be triturated with solution of potash; taste mawkish and rancid.

Dose.—20 to 30 grains.

Preparations.

Extractum Ergotæ Liquidum .	1 ounce to 1 fluid ounce
Infusum Ergotæ . . .	11 grains to 1 fluid ounce
Tinctura Ergotæ . . .	109 grains to 1 fluid ounce

30% fatty oil which contains cholesterin.
Ergotinine.

ERGOTINUM.

Ergotin.

Purified extract of Ergot, commonly called Ergotin, Ergotine, or Bonjean's Ergotine.

Take of

Liquid Extract of Ergot	of each .	4 fluid ounces
Rectified Spirit . .		

Evaporate the fluid extract by a water-bath to a syrupy consistence, and when cold mix with the spirit. Let it stand for half an hour, then filter, and evaporate the filtered liquid to the consistence of a soft extract.

Dose.—2 to 5 grains.

Preparation.—Injectio Ergotini Hypodermica.

ESSENTIA ANISI.

Essence of Anise.

An "Essence" is a strong solution of a volatile oil in spirit.

Take of

Oil of Anise . .	1 fluid ounce	. . or . .	1 fluid part
Rectified Spirit .	4 fluid ounces	. . ,, . .	4 fluid parts

Mix.

Dose.—10 to 20 minims.

ESSENTIA MENTHÆ PIPERITÆ.

Essence of Peppermint.

Take of

Oil of Peppermint .	1 fluid ounce	. . or . .	1 fluid part
Rectified Spirit .	4 fluid ounces	. . ,, . .	4 fluid parts

Mix.

Dose.—10 to 20 minims.

"Extract" is a strong preparation, made by reducing the soluble ion of a drug (in water, spirit &c) to a solid or semi-solid consistence.

EXTRACTUM ACONITI.

Extract of Aconite.

A Fluid Extract is similarly prepared but the concentration is only carried to the point of producing a concentrated liquid preparation usually of such a strength that 1 fl. part equals 1 part of the drug.

Take of

The fresh leaves and flowering tops of Aconite	112 pounds

Bruise in a stone mortar, and press out the juice; heat it gradually to 130° F. (54°·4 C.), and separate the green colouring matter by a calico filter. Heat the strained liquor to

200° F. (93°·3 C.) to coagulate the albumen, and again filter. Evaporate the filtrate by a water-bath to the consistence of a thin syrup; then add to it the green colouring matter previously separated and passed through a hair sieve, and, stirring the whole together assiduously, continue the evaporation at a temperature not exceeding 140° F. (60° C.), until the extract is of a suitable consistence for forming pills.

Dose.—¼ to 1 grain.

EXTRACTUM ALOES BARBADENSIS.

Extract of Barbadoes Aloes.

Take of

Barbadoes Aloes, in small fragments .	1 pound
Boiling Distilled Water	1 gallon

Add the aloes to the water, and stir well until they are thoroughly mixed. Set aside for twelve hours; then pour off the clear liquid, strain the remainder, and evaporate the mixed liquors by a current of warm air to dryness.

Heat converts the resin into amorphous resin.

Dose.—2 to 6 grains.

EXTRACTUM ALOES SOCOTRINÆ.

Extract of Socotrine Aloes.

Take of

Socotrine Aloes, in small fragments .	1 pound
Boiling Distilled Water	1 gallon

Add the aloes to the water, and stir well until they are thoroughly mixed. Set aside for twelve hours; then pour off the clear liquid, strain the remainder, and evaporate the mixed liquors by a current of warm air to dryness.

Dose.—2 to 6 grains.

Preparations.

Decoctum Aloes Compositum .	4·3 grains in 1 fluid ounce
Extractum Colocynthidis Compositum	1 part in 2¼, nearly

EXTRACTUM ANTHEMIDIS.

Extract of Chamomile.

Take of

Chamomile Flowers	1 pound
Oil of Chamomile	15 minims
Distilled Water	1 gallon

Boil the chamomile flowers with the water until the volume is reduced to one half, then strain, press, and filter. Evaporate the liquor by a water-bath, until the extract is of a suitable consistence for forming pills, adding the oil of chamomile at the end of the process. Oil added last to compensate for loss by evaporation, the therapeutic value of the chamomile being resident in the extractive matter.

Dose.—2 to 10 grains.

EXTRACTUM BELÆ LIQUIDUM.

Liquid Extract of Bael.

Take of

Bael Fruit.	1 pound
Distilled Water	12 pints
Rectified Spirit	3 fluid ounces

Macerate the bael for twelve hours in one-third of the water; pour off the clear liquor; repeat the maceration a second and third time for one hour in the remaining two-thirds of the water; press the marc; and filter the mixed liquors through flannel.(1) Evaporate to thirteen fluid ounces, and, when cold, add the rectified spirit, this preserves the preparation but is not added in such quantity as to [illegible] the mucilage

Dose.—1 to 2 fluid drachms.

(1) On account of the large amount of mucilaginous matter, it is difficult to filter thro any other medium.

EXTRACTUM BELLADONNÆ.

Extract of Belladonna.

Take of

The fresh leaves and young branches of Belladonna	112 pounds

Bruise in a stone mortar, and press out the juice; heat it gradually to 130° F. (54°·4 C.), and separate the green colouring matter by a calico filter. Heat the strained liquor to 200° F. (93°·3 C.) to coagulate the albumen, and again filter. Evaporate the filtrate by a water-bath to the consistence of a thin syrup; then add to it the green colouring matter previously separated and passed through a hair sieve, and, stirring the whole together assiduously, continue the evaporation at a temperature not exceeding 140° F. (60° C.), until the extract is of a suitable consistence for forming pills.

Dose.—$\frac{1}{4}$ to 1 grain.

EXTRACTUM BELLADONNÆ ALCOHOLICUM.

Alcoholic Extract of Belladonna.

Take of

Belladonna Root, in No. 20 powder .	1 pound
Rectified Spirit, Distilled Water, of each . . .	a sufficiency

Mix the belladonna with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with water until two pints of liquid have been collected. Evaporate the percolated liquid by a water-bath until the extract has acquired a suitable consistence.

" *Dose.*—$\frac{1}{16}$ to $\frac{1}{4}$ grain. About 1½ times stronger than Ext. Bellad.

Preparations.

Emplastrum Belladonnæ | Unguentum Belladonnæ

EXTRACTUM CALUMBÆ.

Extract of Calumba.

Take of

Calumba Root, cut small	1 pound
Proof Spirit	4 pints

Macerate the calumba with two pints of the proof spirit for twelve hours, strain and press. Macerate again with the same quantity of proof spirit, strain and press as before. Mix and filter the liquors, recover the spirit by distillation, and evaporate the residue by the heat of a water-bath until the extract is of a suitable consistence for forming pills.

Dose.—2 to 10 grains.

EXTRACTUM CANNABIS INDICÆ.

Extract of Indian Hemp.

Take of

Indian Hemp, in coarse powder	1 pound
Rectified Spirit	4 pints

Macerate the hemp in the spirit for seven days, and press out the tincture. Distil off the greater part of the spirit, and evaporate what remains by a water-bath to the consistence of a soft extract.

Dose.—$\frac{1}{4}$ to 1 grain.

Preparation.—Tinctura Cannabis Indicæ, 1 ounce to 1 pint.

EXTRACTUM CASCARÆ SAGRADÆ.

Extract of Cascara Sagrada.

Synonym.—Extractum Rhamni Purshiani.

Take of

Cascara Sagrada, in No. 40 powder	1 pound
Proof Spirit Distilled Water } of each	a sufficiency

Mix the cascara with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with water until three pints of liquid have been collected, or the cascara is exhausted. Evaporate the percolated liquid by a water-bath until the extract has acquired a suitable consistence.

Dose.—2 to 8 grains.

"Tasteless" Extract is prepared by boiling with lime or (preferably magnesia, recently ignited.

EXTRACTUM CASCARÆ SAGRADÆ LIQUIDUM.

Liquid Extract of Cascara Sagrada.

Synonym.—Extractum Rhamni Purshiani Liquidum.

Take of

Cascara Sagrada, in coarse powder	1 pound
Rectified Spirit	4 fluid ounces
Distilled Water	a sufficiency

Boil the bark in three or four successive quantities of the water until exhausted. Evaporate the strained liquors by a water-bath, to twelve fluid ounces; when cold add the spirit, allow the mixture to remain for some hours, then filter, and make up to the volume of sixteen fluid ounces with distilled water.

Dose.—$\frac{1}{2}$ to 2 fluid drachms.

EXTRACTUM CIMICIFUGÆ LIQUIDUM.

Liquid Extract of Cimicifuga.

Take of

Cimicifuga, in No. 60 powder	20 ounces
Rectified Spirit	a sufficiency

Mix the cimicifuga with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with more spirit, until the cimicifuga is exhausted. Reserve the first fi[illegible]en fluid ounces of the percolate, and evaporate the remainder by a water-bath to the consistence of a soft extract; dissolve this in the reserved portion, and make up the volume to twenty fluid ounces by the addition of more spirit.

Dose.—3 to 30 minims.

The acid is used for the purpose of aiding the extraction of alkaloids by converting the almost insoluble cinchotannates into hydrochlorides.

EXTRACTUM CINCHONÆ LIQUIDUM.

Liquid Extract of Cinchona.

The glycerine has the double effect of aiding extraction + of preventing the decomposition of the peculiar tannic acid of the bark.

Take of

Red Cinchona Bark, in No. 60 powder		20 ounces
Hydrochloric Acid		5 fluid drachms
Glycerine		2½ fluid ounces
Rectified Spirit Distilled Water	of each	a sufficiency

Mix the bark with five pints of the water to which the acid and glycerine have been added, and macerate in a covered vessel for forty-eight hours, stirring frequently; then transfer to a percolator, and when the fluid ceases to pass, and the contents of the percolator have been properly packed, continue the percolation with water until fifteen pints of liquid have passed, or that which is passing has ceased to give a precipitate on the addition to it of an excess of solution of soda. Evaporate the percolated liquid in a porcelain or enamelled iron vessel at a temperature not exceeding 180° F. (82°·2 C.) until it is reduced to twenty fluid ounces.

The percolation is very tedious + complete exhaustion seems to be unattainable.

The evaporation is best conducted in vacuo as by heat much of the alkaloid is rendered insoluble. especially if the temperature approaches ebullition.

Put fifty fluid grains of this liquid (*a*) with half an ounce of distilled water into a stoppered glass separator capable of holding four fluid ounces; add to this one fluid ounce of benzolated amylic alcohol and half a fluid ounce of solution of soda, shake them together thoroughly and repeatedly, then allow them to remain at rest until the spirituous solution of the alkaloids shall have separated and formed a distinct stratum over the dark-coloured alkaline solution of the other constituents of the extract. Run off the latter by the stopcock, add a little more distilled water to wash away any still adhering alkaline solution from the separator and its contents, and having run off this as before, as completely as possible, decant the spirituous solution into a small porcelain or glass dish the weight of which is known. Evaporate by the heat of a water-bath until a perfectly dry residue is left. The weight now of the dish and its contents, after deducting the known weight of the dish, will give that of the alkaloids, and this multiplied by 2 will give the parts by weight of the alkaloids in 100 fluid parts of the liquid (*a*).

Having thus ascertained the alkaloidal strength of the liquid (*a*), every fluid part of it containing five grains of total alkaloids is first to be brought to the volume of eighty-five grains by evaporation, or if necessary by dilution with water, then 12·5 fluid grains of rectified spirit are to be added, and the final adjustment of the volume to 100 fluid grains is to be effected by the addition of distilled water. The finished liquid extract will thus contain five grains of the alkaloids of the bark in every 100 fluid grains.

Dose.—5 to 10 minims.

The yield by the P.B. method of extraction is very seldom 20 fl. oz. as the official bark contains 5–6% of alkaloids a portion is always left behind in the marc & some is lost by becoming in[illegible] during the [illegible]

EXTRACTUM COCÆ LIQUIDUM.

Liquid Extract of Coca.

Take of

Coca, in No. 40 powder . . .	20 ounces
Proof Spirit	a sufficiency

Mix the coca with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with more of the spirit until the coca is exhausted. Reserve the first fifteen fluid ounces of the percolate, and evaporate the remainder by a water-bath to the consistence of a soft extract, dissolve this in the reserved portion, and make up the volume to twenty fluid ounces by the addition of more spirit.

Dose.—½ to 2 fluid drachms.

EXTRACTUM COLCHICI.

Extract of Colchicum.

The juice is set aside to deposit earthy matter & starch, of which there is considerable amount in the corms.

Take of

Fresh Colchicum Corms, deprived of their coats	7 pounds

Crush the corms; press out the juice; allow the feculence to subside, and heat the clear liquor to 212° F. (100° C.); then strain through flannel and evaporate by a water-bath,,, at a temperature not exceeding 160° F. (71°·1 C.) until the extract is of a suitable consistence for forming pills.

a higher temp. would decompose the colchicine.

Dose.—½ to 2 grains.

EXTRACTUM COLCHICI ACETICUM.

Acetic Extract of Colchicum.

Take of

Fresh Colchicum Corms, deprived of their coats	7 pounds
Acetic Acid	6 fluid ounces

Contains acetate of colchicine which is more soluble than colchicine.

Crush the corms, add the acetic acid, and press out the juice; allow the feculence to subside, and heat the clear liquor to 212° F. (100° C.); then strain through flannel, and evaporate by a water-bath at a temperature not exceeding 160° F. (71°·1 C.) to the consistence of a soft extract.

Dose.—½ to 2 grains. The action of the acetic acid is to convert the starch substances by hydrolysis into glucose

EXTRACTUM COLOCYNTHIDIS COMPOSITUM.

Compound Extract of Colocynth.

Distd. from [illegible] sol: [illegible] odour.

Take of

Colocynth Pulp	6 ounces	— 1 to 4½ nearly
Extract of Socotrine Aloes . . .	12 ounces	2 to 4½ "
Resin of Scammony	4 ounces	1 in 7 "
Curd Soap, in powder	3 ounces	
Cardamom Seeds, in the finest powder .	1 ounce	
Proof Spirit	1 gallon	

Macerate the colocynth in the spirit for four days; press out the tincture and distil off the spirit; then add the aloes, scammony, and soap, and evaporate by a water-bath until the extract is of a suitable consistence for forming pills, adding the cardamoms towards the end of the process. to prevent dissipation of the Vol: oil.

Dose.—3 to 10 grains.

On account of volatility of active principle is one of the most difficult to prepare.

EXTRACTUM CONII.

Extract of Hemlock.

Take of

The fresh leaves and young branches of Hemlock	112 pounds

Rubbed into a paste with a little KHO a characteristic odour of juice is developed due to the liberation of the conine by the KOH.

Bruise in a stone mortar, and press out the juice; heat it gradually to 130° F. (54°·4 C.), and separate the green colouring matter by a calico filter. Heat the strained liquor to 200° F. (93°·3 C.) to coagulate the albumen, and again filter. Evaporate the filtrate by a water-bath to the consistence of a thin syrup; then add to it the green colouring matter previously separated and passed through a hair sieve, and, stirring the whole together assiduously, continue the evaporation at a temperature not exceeding 140° F. (60° C.), until the extract is of a suitable consistence for forming pills.

Dose.—2 to 6 grains.

Preparations.

Pilula Conii Composita .	2½ parts in 3

EXTRACTUM ERGOTÆ LIQUIDUM.

Liquid Extract of Ergot.

Take of

Ergot, crushed	1 pound
Distilled Water	6 pints
Rectified Spirit	6 fluid ounces

Digest the ergot in four pints of the water for twelve hours. Draw off the infusion and repeat the digestion with the remainder of the water. Press out, strain, and evaporate the liquors by the heat of a water-bath to eleven fluid ounces; when cold, add the spirit. Allow it to stand for an hour to coagulate, then filter. The product should measure sixteen fluid ounces.

Dose.—10 to 30 minims.

Preparation.—Ergotinum.

EXTRACTUM FILICIS LIQUIDUM.

Liquid Extract of Male Fern.

Take of

Male Fern, in coarse powder	2 pounds
Ether	4 pints, or a sufficiency

Pack the male fern closely in a percolator, and pass the ether slowly through it until it passes colourless. Let the ether evaporate on a water-bath, or recover it by distillation, and preserve the oily extract.

Dose.—15 to 30 minims.

EXTRACTUM GELSEMII ALCOHOLICUM.

Alcoholic Extract of Gelsemium.

Take of

Gelsemium, in No. 60 powder	1 pound
Rectified Spirit Distilled Water } of each	a sufficiency

Mix the gelsemium with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with water until two pints of liquor have been collected. Evaporate the percolated liquor by a water-bath until the extract has acquired a suitable consistence.

Dose.—½ to 2 grains.

EXTRACTUM GENTIANÆ.

Extract of Gentian.

(1) 'To prevent the solution of albuminous matter which is coagulated at this (1) limit.

Take of

Gentian Root, sliced	1 pound
(1) Boiling Distilled Water	1 gallon

Infuse the gentian in the water for two hours; boil for fifteen minutes; pour off, press, and strain. Then evaporate the liquor by a water-bath until the extract is of a suitable consistence for forming pills.

Dose.—2 to 10 grains.

Glycyrrhizin being only soluble in boiling water the B.P. preparations contain little or none of this principle. The addition of a small quantity of ammonia facilitates extraction of the principle.

EXTRACTUM GLYCYRRHIZÆ.

Extract of Liquorice.

Take of

Liquorice Root, in No. 20 powder . .	1 pound
Distilled Water	4 pints

Macerate the liquorice root with two pints of the water for twelve hours, strain and press; again macerate the pressed marc with the remainder of the water for six hours, strain and press. Mix the strained liquors, heat them to 212° F. (100° C.), and strain through flannel; then evaporate by a water-bath until the extract is of a suitable consistence for forming pills.

Preparations.

Confectio Sennæ . . .	1 part in 75
Decoctum Aloes Compositum .	1 ounce in 25 fluid ounces
Tinctura Aloes	1½ ounce to 1 pint
Trochisci Opii	

Dose.—5 grains to 1 drachm.

EXTRACTUM GLYCYRRHIZÆ LIQUIDUM.

Liquid Extract of Liquorice.

Take of

Liquorice Root, in No. 20 powder	1 pound
Distilled Water	4 pints
Rectified Spirit	a sufficiency

Macerate the liquorice root with two pints of the water for twelve hours, strain and press; again macerate the pressed marc with the remainder of the water for six hours, strain and press. Mix the strained liquors, heat them to 212° F. (100° C.), and strain through flannel; then evaporate by a water-bath, until it has acquired, when cold, a specific gravity of 1·160; add to this one-sixth of its volume of rectified spirit; let the mixture stand for twelve hours, and filter.

Dose.—1 fluid drachm.

Preparations.

Mistura Sennæ Composita	1 ounce in 1 pint
Tinctura Chloroformi et Morphinæ	

EXTRACTUM HÆMATOXYLI.

Extract of Logwood.

Take of

Logwood, in fine chips	1 pound
Boiling Distilled Water	1 gallon

Infuse the logwood in the water for twenty-four hours, then boil down to one-half, strain, and evaporate to dryness by a water-bath, stirring with a wooden spatula. Iron vessels should not be used, on account of the large amount of ~~logwood~~ tannin in logwood.

Dose.—10 to 30 grains.

EXTRACTUM HYOSCYAMI.

Extract of Henbane.

Take of

The fresh leaves, flowering tops, and young branches of Henbane	112 pounds

Bruise in a stone mortar and press out the juice; heat it gradually to 130° F. (54°·4 C.), and separate the green colouring matter by a calico filter. Heat the strained liquor to 200° F. (93°·3 C.) to coagulate the albumen, and again filter. Evaporate the filtrate by a water-bath to the consistence of a thin syrup; then add to it the green colouring matter previously separated and passed through a hair sieve, and, stirring the whole assiduously, continue the evaporation at a temperature not exceeding 140° F. (60° C.), until the extract is of a suitable consistence for forming pills.

Dose.—5 to 10 grains.

Preparation.

Pilula Colocynthidis et Hyoscyami, 1 part in 3.

EXTRACTUM JABORANDI.

Extract of Jaborandi.

Take of

Jaborandi, in No. 40 powder	. .	1 pound
Proof Spirit Distilled Water	} of each . . .	a sufficiency

Mix the jaborandi with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with water until two pints of liquid have been collected. Evaporate the percolated liquid until the extract has acquired a suitable consistence.

Dose.—2 to 10 grains.

PREP. Pilocarpine Nit.

EXTRACTUM JALAPÆ.

Extract of Jalap.

Take of

Jalap, in coarse powder	. . . .	1 pound
Rectified Spirit	. . . . .	4 pints
Distilled Water	. . . . .	1 gallon

The [illegible] [illegible]
in [illegible] the [illegible].
[illegible] the mucilage

Macerate the jalap in the spirit for seven days; press out the tincture, then filter, and distil off the spirit, leaving a soft extract. Again macerate the residual jalap in the water for four hours, express, strain through flannel, and evaporate by a water-bath to a soft extract. Mix the two extracts, and evaporate at a temperature not exceeding 140° F. (60° C.) until it has acquired a suitable consistence for forming pills.

Dose.—5 to 15 grains.

EXTRACTUM KRAMERIÆ.

Extract of Rhatany.

Take of

Rhatany Root, in No. 40 powder . .	1 pound
Distilled Water	a sufficiency

Macerate the rhatany in a pint and a half of the water for twenty-four hours; then pack in a percolator, and add more distilled water, until twelve pints have been collected, or the rhatany is exhausted. Evaporate the liquor by a water-bath to dryness.

Dose.—5 to 20 grains.

EXTRACTUM LACTUCÆ.

Extract of Lettuce.

Take of

The flowering herb of Lettuce . .	112 pounds

Bruise in a stone mortar, and press out the juice; heat it gradually to 130° F. (54°·4 C.), and separate the green colouring matter by a calico filter. Heat the strained liquor to 200° F. (93°·3 C.) to coagulate the albumen, and again filter. Evaporate the filtrate by a water-bath to the consistence of a thin syrup; then add to it the green colouring matter previously separated and passed through a hair sieve, and, stirring the whole together assiduously, continue the evaporation at a temperature not exceeding 140° F. (60° C.) until the extract is of a suitable consistence for forming pills.

Dose.—5 to 15 grains.

EXTRACTUM LUPULI.

Extract of Hop.

S. V. R. dissolves out the resin + Vol: oil; water the lupuline + tannin.

Take of

Hop	1 pound
Rectified Spirit	1½ pint
Distilled Water	1 gallon

Macerate the hop in the spirit for seven days, press out the tincture, filter, and distil off the spirit, leaving a soft extract. Boil the residual hop with the water for one hour, press out the liquor, strain, and evaporate by a water-bath to the consistence of a soft extract. Mix the two extracts, and evaporate at a temperature not exceeding 140° F. (60° C.) until it has acquired a suitable consistence for forming pills.

Dose.—5 to 15 grains.

EXTRACTUM MEZEREI ÆTHEREUM.

Ethereal Extract of Mezereon.

The ether dissolves out the resin which is the principal constituent.

Take of

Mezereon Bark, cut small	1 pound
Rectified Spirit	8 pints
Ether	1 pint

Macerate the mezereon in six pints of the spirit for three days, with frequent agitation; strain and press. To the residue of the mezereon add the remainder of the spirit, and again macerate for three days, with frequent agitation; strain and press. Mix and filter the strained liquors; recover the greater part of the spirit by distillation, evaporate what remains to the consistence of a soft extract; put this into a stoppered bottle with the ether, and macerate for twenty-four hours, shaking them frequently. Decant the ethereal solution; recover part of the ether by distillation, and evaporate what remains to the consistence of a soft extract.

Preparation.

Linimentum Sinapis Compositum	8 grains in 1 fluid ounce

EXTRACTUM NUCIS VOMICÆ.

Extract of Nux Vomica.

Dilute strength of the
solvent; it dissolves
alkaloids
perfectly but
[illegible] scarcely
[illegible]
mucilage or albumen
abounds
seeds

Take of

Nux Vomica	1 pound
Rectified Spirit	64 fluid ounces
Distilled Water	16 fluid ounces

It is almost
impossible to powder
the seeds unless
previously dried
as ordered.

Heat the previously split seeds to a temperature of 212° F. (100° C.) for three hours, and then reduce to a fine powder. Mix the spirit with the water, and make the powdered nux vomica into a paste with one pint of the mixture. Allow this to macerate for twelve hours, then transfer to a percolator, and add another pint of the mixture. When this has percolated, pour on the remainder of the diluted spirit in successive portions; press the marc, filter the expressed liquor, and add it to the percolated liquid.

Take of this liquid one fluid ounce, and estimate the amount of total alkaloid in the following way:—Evaporate almost to dryness over a water-bath, dissolve the residue in two fluid drachms of chloroform and half a fluid ounce of dilute sulphuric acid, with an equal bulk of water; agitate and warm gently. When the liquors have separated, draw off the chloroform, and add to the acid liquor excess of solution of ammonia and half a fluid ounce of chloroform; well agitate, gently warm, and, after the liquors have completely separated, transfer the chloroform to a weighed dish, evaporate over a water-bath, and dry for one hour at 212° F. (100° C.) Allow the residue of total alkaloid to cool, and then weigh.

Removes oil + colouring matter

Take of the percolated liquid as much as contains 131¼ grains of total alkaloid, distil off the spirit, and evaporate over a water-bath until the extract weighs two ounces. This extract will contain fifteen per cent. of total alkaloid.

Strychnine + Brucine

Test.—Ten grains of the extract when treated in the following manner should yield one grain and a half of total alkaloid. Dissolve the extract in half a fluid ounce of water, heating gently if necessary, and add a drachm of carbonate of sodium previously dissolved in half a fluid ounce of water and half a fluid ounce of chloroform; agitate, warm gently, and separate the chloroform. Add to this half a fluid ounce of dilute sulphuric acid with an equal bulk of water; again agitate, warm, and separate the acid liquor from the chloroform. To this acid liquor add now an excess of ammonia, and agitate with half a fluid ounce of chloroform; when the liquors have separated, transfer the chloroform to a weighed dish, and evaporate the chloroform over a water-bath. Dry the residue for one hour, and weigh.

Dose.—$\frac{1}{4}$ to 1 grain.

Preparation.—Tinctura Nucis Vomicæ.

EXTRACTUM OPII.

Extract of Opium.

During the drying of the opium or the evaporation of the extract narcotine is lost the morphia being obtained

Take of

Opium	1 pound
Distilled Water	6 pints

Macerate the opium in two pints of the water for twenty-four hours, and express the liquor. Thoroughly mix the residue of the opium with two pints of water, macerate again for twenty-four hours, and express. Repeat the operation a third time. Mix the liquors, strain through flannel, and evaporate by a water-bath to about half a pound.

Test.—Analysed as described under 'Opium,' this extract should yield about twenty per cent. of morphine.

Dose.—$\frac{1}{2}$ to 2 grains.

Preparations.

Extractum Opii Liquidum	1 ounce in 1 pint
Trochisci Opii	$\frac{1}{10}$ grain in each lozenge
Vinum Opii	1 ounce in 1 pint

EXTRACTUM OPII LIQUIDUM.

Liquid Extract of Opium.

Take of

Extract of Opium	1 ounce
Distilled Water	16 fluid ounces
Rectified Spirit	4 fluid ounces

Macerate the extract of opium in the water for an hour, stirring frequently; then add the spirit, and filter. The product should measure one pint.

It contains 22 grains of extract of opium, nearly, in 1 fluid ounce. Specific gravity from 0·985 to 0·995.

Test.—Analysed as described under 'Opium,' this liquid extract should yield about one per cent. of morphine.

Dose.—10 to 40 minims.

EXTRACTUM PAPAVERIS.

Extract of Poppy.

Take of

Poppy Capsules, freed from the seeds and in No. 20 powder . . .	1 pound
Rectified Spirit	2 ounces
Boiling Distilled Water . . .	a sufficiency

Mix the poppy capsules with two pints of the water, and infuse for twenty-four hours, stirring frequently; then pack in a percolator, and, adding more of the water, allow the liquor slowly to pass until about a gallon has been collected, or until the residue is exhausted. Evaporate the liquor by a water-bath until it is reduced to a pint, and, when cold, add the spirit. Let the mixture stand for twenty-four hours, then separate the clear liquor by filtration, and evaporate this by a water-bath until the extract has acquired a suitable consistence for forming pills. 0·726 1·61 % Morphine = 36 7grs per ℥.

Dose.—2 to 5 grains.

EXTRACTUM PAREIRÆ.

Extract of Pareira.

Take of

Pareira Root, in No. 40 powder .	1 pound
Boiling Distilled Water . . .	a sufficiency

Digest the pareira root with a pint of the water for twenty-four hours, then pack in a percolator, and, adding more of the water, allow the liquor slowly to pass until about a gallon has been collected, or the pareira is exhausted. Evaporate the liquor by a water-bath until the extract has acquired a suitable consistence for forming pills.

Dose.—10 to 30 grains.

Preparation.—Extractum Pareiræ Liquidum.

EXTRACTUM PAREIRÆ LIQUIDUM.

Liquid Extract of Pareira.

Take of

Extract of Pareira	of each . . a sufficiency
Distilled Water	
Rectified Spirit	

Dissolve 4 parts of the extract in a sufficient quantity of a mixture of one fluid part of rectified spirit and three parts of water to form sixteen fluid parts of liquid extract. Filter, if necessary.

Dose.—$\frac{1}{2}$ to 2 fluid drachms.

EXTRACTUM PHYSOSTIGMATIS.

Extract of Calabar Bean.

Take of

Calabar Bean, in No. 40 powder . .	1 pound
Rectified Spirit	4 pints

Macerate the bean for forty-eight hours with one pint of the spirit in a closed vessel, agitating occasionally; then transfer to a percolator, and, when the fluid ceases to pass, add the remainder of the spirit so that it may slowly percolate through the powder. Subject the residue of the bean to pressure, adding the expressed liquor to the product of the percolation; filter, distil off most of the spirit, and evaporate what is left in the retort by a water-bath to the consistence of a soft extract.

Dose.—$\frac{1}{16}$ to $\frac{1}{4}$ grain.

Preparation.—Physostigmina.

EXTRACTUM QUASSIÆ.

Extract of Quassia.

Take of

Quassia Wood, rasped	1 pound
Distilled Water	a sufficiency

Cold water avoids the extraction of a glutinous principle

Macerate the quassia with eight fluid ounces of the water for twelve hours; then pack in a percolator, and, adding more of the water, allow the liquor slowly to pass until the quassia is exhausted. Evaporate the liquor; filter before it becomes too thick; and again evaporate by a water-bath until the extract is of a suitable consistence for forming pills.

Dose.—3 to 5 grains.

EXTRACTUM RHAMNI FRANGULÆ.

Extract of Rhamnus Frangula.

Synonym.—Extractum Frangulæ.

Take of

Rhamnus Frangula Bark, in No. 40 powder	1 pound
Proof Spirit } Water } of each	a sufficiency

Mix the rhamnus with two pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with water until three pints of liquor have been collected, or the rhamnus is exhausted. Evaporate the percolated liquor by a water-bath until the extract has acquired a suitable consistence.

Dose.—15 to 60 grains.

EXTRACTUM RHAMNI FRANGULÆ LIQUIDUM.

Liquid Extract of Rhamnus Frangula.

Take of

Rhamnus Frangula Bark, in coarse powder	1 pound
Rectified Spirit	4 fluid ounces
Distilled Water	a sufficiency

Boil the bark in three or four successive quantities of the water, until exhausted. Evaporate the liquors by the heat of a water-bath to twelve fluid ounces; when cold add the spirit, allow the mixture to remain for some hours, then filter, and make up to the volume of sixteen fluid ounces with distilled water.

Dose.—1 to 4 fluid drachms.

EXTRACTUM RHEI.

Extract of Rhubarb.

Take of

Rhubarb Root, in No. 40 powder .	1 pound
Proof Spirit Distilled Water } of each . . .	a sufficiency

Mix the rhubarb with three pints of the spirit, and macerate in a closed vessel for forty-eight hours; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with water until five pints of liquor have been collected, or the rhubarb is exhausted. Evaporate the percolated liquor by a water-bath until the extract has acquired a suitable consistence for forming pills.

Dose.—5 to 15 grains.

EXTRACTUM SARSÆ LIQUIDUM.

Liquid Extract of Sarsaparilla

The sugar prevents deposition of resinous matter during evaporation.

Synonym.—Liquor Sarsæ.

Take of

Jamaica Sarsaparilla, in No. 40 powder	40 ounces
Proof Spirit	2 pints
Sugar	5 ounces
Distilled Water	12 pints

Mix the sarsaparilla with the spirit, and macerate in a closed vessel for ten days; then press out twenty fluid ounces of liquor, and set this aside. Mix the pressed residue with the water, and macerate at 160° F. (71°·1 C.) for sixteen hours, (1) To avoid dissolving starch. then strain and press out the liquid, dissolve the sugar in this, and evaporate in a water-bath to about eighteen fluid ounces. Mix the two liquids, and make up the volume to forty fluid ounces by the addition of distilled water.[1]

Dose.—2 to 4 fluid drachms.

EXTRACTUM STRAMONII.

Extract of Stramonium.

Take of

Stramonium Seeds, in No. 40 powder	1 pound
Ether	1 pint, or a sufficiency
Distilled Water, Proof Spirit, of each	a sufficiency

Shake the ether in a bottle with half a pint of the water, and after separation decant the ether. Pack the stramonium in a percolator and free it from its oil by passing the washed ether slowly through it. Having removed and rejected the ethereal solution, pour the spirit over the residue of the stramonium in the percolator, and allow it to pass through slowly until the powder is exhausted. Distil off most of the spirit from the tincture, and evaporate the residue by a water-bath until the extract has acquired a suitable consistence for forming pills.

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[1] Improved exhaustion of the root requires this increased proportion of product as compared with that of B. P. 1867.

Dose.—$\frac{1}{4}$ to $\frac{1}{2}$ grain.

EXTRACTUM TARAXACI.

Extract of Dandelion.

The juice is set aside to deposit earthy matter & inulin.

Take of

Fresh Dandelion Root	4 pounds

Crush the root; press out the juice, and allow it to deposit; then heat(1) the liquor to 212° F. (100° C.), and maintain the temperature for ten minutes; then strain, and evaporate by a water-bath at a temperature not exceeding 160° F. (71°·1 C.) until the extract has acquired a suitable consistence for forming pills.

(1) The heating coagulates albumen.

Dose.—5 to 30 grains.

EXTRACTUM TARAXACI LIQUIDUM.

Liquid Extract of Dandelion.

Take of

Dried Dandelion Root, in No. 20 powder	40 ounces
Proof Spirit	4 pints
Distilled Water	a sufficiency

Mix the dandelion with the spirit, and macerate in a closed vessel for forty-eight hours; then press out twenty fluid ounces of liquid, and set this aside. Mix the pressed residue with two or three pints of the water, and again macerate for forty-eight hours; press out and strain the liquid; evaporate this by a water-bath to about eighteen fluid ounces. Mix the two liquids, and make up the volume to forty fluid ounces by the addition of distilled water. Finally filter.

Dose.—$\frac{1}{4}$ to 2 fluid drachms.

FARINA TRITICI.

Wheaten Flour. N.O. Graminaceæ.

The grain of Triticum sativum, *Lam.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 294, ground and sifted. Cultivated in this country probably indig: to Central Asia

Preparation.—Cataplasma Fermenti, Mica Panis.

P.C. About 72 % starch ·11 % gluten as well as sugar, gum, bran, water, ash.

FEL BOVINUM PURIFICATUM.

Purified Ox Bile. N.O. Ruminantia.

The purified gall of the Ox, Bos Taurus, *Linn.*

Take of

Fresh Ox Bile	1 pint
Rectified Spirit	a sufficiency

The addition of the spirit causes separation of the mucus & epithelial tissue which render the preparation unstable.

Evaporate the bile to five fluid ounces, and mix it with half a pint of the spirit by agitation in a bottle, setting the mixture aside for twelve hours or until the sediment subsides. Decant the clear solution, and filter the remainder, washing the filter and contents with a little more of the spirit. Distil off most of the spirit from the mixed liquids, and evaporate the residue in a porcelain dish by the heat of a water-bath until it acquires a suitable consistence for forming pills.

Characters and Tests.—A yellowish-green substance, having a taste partly sweet and partly bitter, soluble in water and in spirit. A solution of one or two grains of it, in about a fluid drachm of water, when treated, first with a drop of freshly made syrup consisting of one part of sugar and four of water, and then with sulphuric acid cautiously added until the precipitate at first formed is redissolved, gradually acquires a cherry-red colour, which changes in succession to carmine, purple, and violet. Its watery solution gives no precipitate on the addition of rectified spirit. Absence of mucous & crude bile.

Dose.—5 to 10 grains. P.C. Sodium salts of glycocholic and taurocholic acids & Cholesterin.

At the instant of pptn: ferrous arseniate is white but rapidly becomes coloured due to the absorption of O + formation of a ferroso ferric arseniate

FERRI ARSENIAS.

Arseniate of Iron.

Arseniates of iron, with some oxide.

Take of

Sulphate of Iron	$20\frac{3}{4}$ ounces
Arseniate of Sodium, dried at 300° F. (148°·9 C.)	$15\frac{3}{4}$ ounces
Bicarbonate of Sodium	$4\frac{1}{2}$ ounces
Boiling Distilled Water	a sufficiency

A higher temp: than 300 will decompose the arseniate.

The $NaHCO_3$ is to insure the absence of free H_2SO_4 which would otherwise be formed + acts as a solvent of ferrous arseniate

Dissolve the arseniate of sodium in about five pints, and the sulphate of iron in about six pints of the water, mix the two solutions, adding the bicarbonate of sodium dissolved in a little distilled water. Stir thoroughly. Collect the white precipitate which has formed, on a calico filter, and wash until the washings cease to be affected by a dilute solution of chloride of barium. Squeeze the washed precipitate between folds of strong linen in a screw-press, and dry it on porous bricks in a warm air-chamber the temperature of which shall not exceed 100° F. (37°·8 C.) Higher temp: would induce oxidation to ferric salt

Characters and Tests.—A tasteless amorphous powder of a greenish colour, insoluble in water, but readily dissolved by hydrochloric acid. The latter solution gives a copious light-blue precipitate with ferrocyanide of potassium, and a still more abundant one of a deeper colour with ferricyanide of potassium. A small quantity, boiled with an excess of caustic soda and filtered, gives, when exactly neutralised by nitric acid, a brick-red precipitate on the addition of solution of nitrate of silver. The solution in hydrochloric acid when diluted gives no precipitate with chloride of barium. One hundred grains dissolved in an excess of sulphuric acid diluted with water continues to give a blue precipitate with ferricyanide of potassium, until at least 225 grain-measures of the volumetric solution of bichromate of potassium have been added. = 10 % $Fe_3(AsO_4)_2$

Ag_3AsO_4

Dose.—$\frac{1}{16}$ to $\frac{1}{2}$ grain.

$3 FeSO_4 + 2 Na_2HAsO_4 + 2 NaHCO_3 = Fe_3 2AsO_4 + 3 Na_2SO_4 + 2CO_2 + 2H_2O.$

Estimation. Take 1 gramme. 1 cc $\frac{N}{10}$ $K_2Cr_2O_7$ = ·0446 grms Fe_3

$K_2Cr_2O_7 + 7H_2SO_4 + 2Fe_3(AsO_4)_2 = Fe_2(SO_4)_3 + Fe_2(AsO_4)_2 + K_2SO_4 + Cr_2(SO_4)_3 + 7$

FERRI CARBONAS SACCHARATA.

Saccharated Carbonate of Iron.

Carbonate of iron, $FeCO_3xH_2O$, mixed with peroxide of iron and sugar, the carbonate (if reckoned as anhydrous) forming about one-third of the mixture. Freshly pptd. contains 50%.

Take of

Sulphate of Iron	2 ounces
Carbonate of Ammonium . . .	1¼ ounce
Boiling Distilled Water	2 gallons
Refined Sugar	1 ounce

Dissolve the sulphate of iron and the carbonate of ammonium each in half a gallon of the water, and mix the two solutions with brisk stirring in a deep cylindrical vessel, which is then to be covered as accurately as possible. Set the mixture by for twenty-four hours, and from the precipitate, which has subsided, separate the supernatant solution by a siphon. Pour on the remainder of the water, stir well, and, after subsidence, again remove the clear solution. Collect the resulting carbonate on a calico filter, and, having first subjected it to expression, rub it with the sugar in a porcelain mortar. Finally, dry the mixture at a temperature not exceeding 212° F. (100° C.) $3FeSO_4 + 2N_3H_{11}C_2O_5 + H_2O = 3FeCO_3 + 3(NH_4)_2SO_4 + CO_2$.

Characters and Tests.—Small coherent lumps of a grey colour with a sweet very feebly chalybeate taste. It dissolves with effervescence in warm hydrochloric acid diluted with half its volume of water, and the solution gives but a very slight precipitate with chloride of barium. Thirty grains, dissolved wld in excess of phosphoric acid and diluted with water, continues se to give a blue precipitate with the ferricyanide of potassium, until at least 287·5 grain-measures of the volumetric solution of bichromate of potassium have been added.

Dose.—5 to 30 grains.

Preparation.—**Pilula Ferri Carbonatis, 1 part in 1¼.**

stimation Take 1 gramme 1 c.c. $\frac{N}{10} K_2Cr_2O_7 = {}^{\cdot}0348\ FeCO_3$.

$_2Cr_2O_7 + 9H_3PO_4 + 6FeCO_3 = 3Fe_2(PO_4)_2 + K_2HPO_4 + Cr_2(PO_4)_2 + 6CO_2 + 13H_2O$.

The production of Scale Preparations depends upon the fact that citri tartaric + some other organic acids form sol^{ble} comp^{ds} with iron + some othe metals which are not ppd with NH_3, or by soda or potash unless boiled; con quently the metallic salt is in a basic condition.
The production of insoluble oxysulphate or oxyhydrate of iron must be avoide by adding the iron solution to the ammonia in excess + washing thoroughly + rapidly by decantation.
The temp: of liquid during evap: should not exceed 82°C + vessels should b shallow. These precautions are necessary to prevent reduction to ferrou salt which is especially liable to occur with tartates

FERRI ET AMMONII CITRAS.

Citrate of Iron and Ammonium.

Synonyms.—Ferri et Ammoniæ Citras; Citrate of Iron and Ammonia.

Take of

Solution of Persulphate of Iron	10 fluid ounces, or a sufficiency
Solution of Ammonia	23 fluid ounces, or a sufficiency
Citric Acid	4 ounces
Distilled Water	a sufficiency

Mix sixteen fluid ounces of the solution of ammonia with two pints of distilled water, and to this add gradually the solution of persulphate of iron, previously diluted with two pints of distilled water, stirring them constantly and briskly, and taking care that ammonia is, even finally, in slight excess as indicated by the odour. Let the mixture stand for two hours, stirring it occasionally, then put it on a calico filter, and when the liquor has drained away, wash the precipitated ferric hydrate with distilled water until that which passes through the filter ceases to give a precipitate with chloride of barium. Dissolve the citric acid in four ounces of distilled water, and having applied the heat of a water-bath, add the ferric hydrate, previously well drained, and stir them together until nearly the whole of the hydrate has dissolved, or until the citric acid is saturated with ferric hydrate (prepared, if necessary, from more of the solution of persulphate of iron). Let the solution cool, then add five and a half fluid ounces of solution of ammonia. Filter through flannel, adding some distilled water if necessary; evaporate to the consistence of syrup, the presence of a very slight excess of ammonia being maintained, and dry in thin layers on flat porcelain or glass plates at a temperature not exceeding 100° F. (37°·8 C.) Remove the dry salt in flakes, and keep it in a stoppered bottle.

If saturated the % of iron in ultimate product would be nearer 36% than 30% as required.

Characters and Tests.—In thin transparent scales of a deep red colour, slightly sweetish and astringent in taste. It feebly reddens litmus paper, is soluble in water, and almost insoluble in rectified spirit. Heated with solution of potash it evolves ammonia and deposits ferric hydrate. The alkaline solution from which the iron has separated does not, when slightly supersaturated with acetic acid, give any crystalline deposit. When incinerated with exposure to air, it "leaves about thirty per cent. of peroxide of iron which is not "alkaline to litmus.

Absence of Tartrate (of K + NH_4)

→ Absence of K or Na salts

Dose.—5 to 10 grains.

Preparation.

Vinum Ferri Citratis . 8 grains in 1 fluid ounce

FERRI ET QUININÆ CITRAS.

Citrate of Iron and Quinine.

15%. Quinine.

Synonyms.—Ferri et Quiniæ Citras; Citrate of Iron and Quinia.

Take of

Solution of Persulphate of Iron .	4½ fluid ounces
Sulphate of Quinine . . .	1 ounce
Diluted Sulphuric Acid . .	12 fluid drachms
Citric Acid	3 ounces and 30 grains
Solution of Ammonia Distilled Water } of each .	a sufficiency

Mix eight fluid ounces of the solution of ammonia with two pints of distilled water, and to this add the solution of persulphate of iron previously diluted with two pints of distilled water, stirring them constantly and briskly. Let the mixture stand for two hours, stirring it occasionally, then put it on a calico filter, and when the liquid has drained away, wash the precipitated ferric hydrate with distilled water until that which passes through the filter ceases to give a precipitate with chloride of barium.

Mix the sulphate of quinine with eight ounces of distilled water, add the diluted sulphuric acid, and when the salt is dissolved precipitate the quinine with a slight excess of solution of ammonia. Collect the precipitate on a filter, and wash it with a pint and a half of distilled water.

Dissolve the citric acid in five ounces of distilled water, and, having applied the heat of a water-bath, add the ferric hydrate, previously well drained; stir them together, and, when the hydrate has dissolved, add the precipitated quinine, continuing the agitation until this also has dissolved. Let the solution cool, then add in small quantities at a time twelve fluid drachms of solution of ammonia diluted with two fluid ounces of distilled water, stirring the solution briskly, and allowing the quinine which separates with each addition of ammonia to dissolve before the next addition is made. Filter the solution, evaporate it to the consistence of a thin syrup, then dry it in thin layers on flat porcelain or glass plates at a temperature of 100° F. (37°·8 C.) Remove the dry salt in flakes, and keep it in a stoppered bottle.

Characters and Tests.—Thin scales of a greenish golden-yellow colour, somewhat deliquescent, and entirely soluble in cold water. The solution is very slightly acid, and is precipitated reddish-brown by solution of soda, white by solution of ammonia, blue by the ferrocyanide and ferricyanide of potassium, and greyish-black by tannic acid. The salt has a bitter taste resembling that of quinine, and also possesses a chalybeate flavour. When burned with exposure to air, it leaves a residue which when moistened with water is not alkaline to test-paper. Fifty grains dissolved in a fluid ounce of water and treated with a slight excess of ammonia gives a white precipitate, which, when dissolved out by successive treatments of the fluid with ether or chloroform, and the latter evaporated, and the residue dried until it ceases to lose weight, weighs seven and a half grains. The precipitate is almost entirely soluble in a little pure ether, and when burned leaves but a minute residue.

Absence of K + Na salts.

Absence of alkaloids other than quinine.

Dose.—5 to 10 grains.

FERRI PEROXIDUM HYDRATUM.

Peroxide of Iron.

Synonyms.—Ferri Sesquioxidum; Ferri Oxidum Rubrum; Hydrous Peroxide of Iron; Ferric Oxyhydrate.

Fe_2O_3,H_2O, or $Fe_2O_2(HO)_2$.

Take of

Solution of Persulphate of Iron	4 fluid ounces
Solution of Soda	33 fluid ounces
Distilled Water	a sufficiency

Mix the solution of persulphate of iron with a pint of the distilled water, and add this gradually to the solution of soda, stirring them constantly and briskly. Let the mixture stand for two hours, stirring it occasionally, then put it on a calico filter, and, when the liquid has drained away, wash the precipitated ferric hydrate with distilled water until what passes through the filter ceases to give a precipitate with chloride of barium.

Dry it at a temperature not exceeding 212° F. (100° C.), until it ceases to lose weight, then reduce it to fine powder.

Characters and Tests.—A reddish-brown powder, destitute of taste, and not magnetic. It dissolves completely, though slowly, with the aid of heat, in hydrochloric acid, diluted with half its volume of water, and the solution gives a copious precipitate with the ferrocyanide, but none with the ferricyanide, of potassium. Heated to dull redness in a test-tube, it yields about ten per cent, of moisture.

Absence of $Fe(OH)_2$

$Fe_2(SO_4)_3 + 6 NaHO = Fe_2(OH)_6 + 3 Na_2SO_4$.

Dose.—5 to 30 grains.

$Fe_2(OH)_6 - Fe_2O_2(OH)_2 + 2H_2O$.

Preparation.

Emplastrum Ferri . . . 1 part in 11

FERRI PHOSPHAS.

Phosphate of Iron.

Ferrous phosphate, $Fe_3(PO_4)_2 8H_2O$, at least 47 per cent.; with ferric phosphate and some oxide.

Take of

Sulphate of Iron	3 ounces
Phosphate of Sodium	2¾ ounces
Bicarbonate of Sodium	¾ ounce
Boiling Distilled Water	a sufficiency

Best to dissolve the $FeSO_4$ in hot not boiling water.

Dissolve the sulphate of iron in thirty ounces of the water, and the phosphate of sodium in a similar quantity of water. When each solution has cooled to between 100° and 130° F. (37°·8 and 54°·4 C.), add the latter to the former, pouring in also a solution of the bicarbonate of sodium in a little distilled water. Mix thoroughly. Transfer the precipitate to a calico filter, and wash it with hot distilled water till the filtrate ceases to give a precipitate with chloride of barium. Finally dry the precipitate at a temperature not exceeding 120° F. (48°·9 C.) A higher temp: would induce formation of ferric sa

Same test applies to F. Arsenias

Absence of As

Characters and Tests.—A slate-blue amorphous powder, insoluble in water, soluble in hydrochloric acid. The solution yields a precipitate with both the ferrocyanide and ferricyanide of potassium, that afforded by the latter being the more abundant; and when treated with tartaric acid and an excess of ammonia, and subsequently with the solution of ammonio-sulphate of magnesium, lets fall a crystalline precipitate. $MgNH_4$ When the salt is digested in hydrochloric acid with a lamina of pure copper, a dark deposit does not form on the metal. Thirty grains dissolved in hydrochloric acid continues to give a blue precipitate with ferricyanide of potassium until at least 279 grain-measures of the volumetric solution of bichromate of potassium have been added.

Dose.—5 to 10 grains.

The great object sought is to prevent oxidation of the ferrous phosph
attain which all the water is boiled in order to expel O dissolved u
+ the whole operation should be carried out quickly. The bicarb
of sodium is added to neutralize the H_3PO_4 set free, which would
act as a solvent on the phosphate of iron.

$$6 Na_2HPO_4 + 6 FeSO_4 = 2 Fe_3(PO_4)_2 + 6 Na_2SO_4 + 2 H_3PO_4$$

$$2 H_3PO_4 + 6 NaHCO_3 = 2 Na_3PO_4 + 6 CO_2 + 6 H_2O$$

$$2 Na_3PO_4 + 3 FeSO_4 = Fe_3(PO_4)_2 + 3 Na_2SO_4.$$

Estimation of Ferri Phosph: take 1 grme. 1 c.c. $\frac{N}{20}$ $K_2Cr_2O_7$ = ·0502 $Fe_3(PO_4)_2 \cdot 8H_2O$

$_2O_7 + 2Fe_3(PO_4)_2 \cdot 8H_2O + 7H_2SO_4 = 2Fe_2(PO_4)_2 + Fe_2(SO_4)_2 + Cr_2(SO_4)_3$
$+ K_2SO_4 + 23H_2O$.

Preparation containing Phosphate of Iron.

Syrupus Ferri Phosphatis .	1 grain in 1 fluid drachm

FERRI SULPHAS.

Sulphate of Iron.

$FeSO_4,7H_2O$.

Take of

Iron Wire	4 ounces
Sulphuric Acid	4 fluid ounces
Distilled Water	$1\frac{1}{2}$ pint

Pour the water on the iron placed in a porcelain dish, add the sulphuric acid, and when the disengagement of gas has nearly ceased, boil for ten minutes. Filter now through paper, and, after the lapse of twenty-four hours, separate the crystals which have been deposited from the solution. Let these be dried on filtering paper placed on porous bricks, and preserved in a stoppered bottle. $Fe + H_2SO_4 + 7H_2O = FeSO_4 \cdot 7H_2O + H_2$.

Characters and Tests.—In oblique rhombic prisms, of a pale greenish-blue colour and styptic taste; insoluble in rectified spirit, soluble in water. The aqueous solution is clear, gives a white precipitate with chloride of barium, a blue with ferricyanide of potassium, and a nearly white or light-blue one with ferrocyanide of potassium. It gives no precipitate with sulphuretted hydrogen. 42·1 grains dissolved in water acidulated with sulphuric acid continues to give a blue precipitate with ferricyanide of potassium until about 500 grain-measures of the volumetric solution of bichromate of potassium have been added.

ce of ic ulphate

→ The presence of ferric salts would cause pptn. of S. Also indicates abs. of Cu.

Dose.—1 to 5 grains.

Preparations.

Ferri Sulphas Exsiccata . .	28 parts yield 17
Pilula Aloes et Ferri . . .	1 part in 7

Mist: Ferri C:

Est: Take 1 grme. 1 c.c. $\frac{N}{10}$ $K_2Cr_2O_7$ = ·0834 grms $FeSO_4 \cdot 7H_2O$.

$Cr_2O_7 + 6FeSO_4 \cdot 7H_2O + 7H_2SO_4 = 3Fe_2(SO_4)_3 + K_2SO_4 + Cr_2(SO_4)_3 + 49H_2O$.

FERRI SULPHAS EXSICCATA.

Dried Sulphate of Iron.

This is called wate
of halhydration

$FeSO_4,H_2O$.

Take of

Sulphate of Iron	4 ounces

Expose it in a porcelain or iron dish to a temperature of 212° F. (100° C.), until aqueous vapour ceases to be given off. Reduce the residue, which should weigh rather less than two and a half ounces, to a fine powder, and preserve it in a stoppered bottle.

Test.—Ten grains dissolved in distilled water acidulated with sulphuric acid continues to give a blue precipitate with ferricyanide of potassium until at least 191 grain-measures of the volumetric solution of bichromate of potassium have been added, corresponding to at least 97½ per cent. of pure dried sulphate of iron.

Dose.—½ to 3 grains.

Vol: Est: 1 c.c. $\frac{N}{20}$ $K_2Cr_2O_7$ = ·0456 gram: $FeSO_4$.

$K_2Cr_2O_7 + 6 FeSO_4 + 7 H_2SO_4 = 3 Fe_2(SO_4)_3 + K_2SO_4 + Cr_2(SO_4)_3 + 7 H_2O$.

FERRI SULPHAS GRANULATA.

Granulated Sulphate of Iron.

$FeSO_4,7H_2O$.

The presence of H prevents oxidation to ferric salt.

Take of

Iron Wire	4 ounces
Sulphuric Acid	4 fluid ounces
Distilled Water	1½ pint
Rectified Spirit	8 fluid ounces

Pour the water on the iron placed in a porcelain capsule, add the sulphuric acid, and when the disengagement of gas has nearly ceased, boil for ten minutes, and then filter the solution into a jar containing the spirit, stirring the mixture so that the salt shall separate in minute granular crystals. Let these, deprived by decantation of adhering liquid, be transferred on filtering paper to porous tiles, and dried by exposure to the atmosphere. They should be preserved in a stoppered bottle.

If boiling were left till all the Fe had dissolved, much ferric salt would be produced.

The stirring is necessary, or the heavy solution would sink to the bottom of the spirit without mixing to any appreciable extent, & the sulphate would deposit in large crystals.

Characters and Tests.—In small granular crystals of a pale greenish-blue colour. In other respects corresponds to the characters and tests for sulphate of iron. 41·7 grains dissolved in distilled water acidulated with sulphuric acid continues to give a blue precipitate with ferricyanide of potassium until 500 grain-measures of the volumetric solution of bichromate of potassium have been added.

Dose.—1 to 5 grains.

FERRUM.

Iron.

Annealed iron wire, having a diameter about 0·005 of an inch (about No. 35 wire gauge), or wrought iron nails; free from oxide.

Preparations of Iron.

Emplastrum Ferri
Ferri Arsenias
,, Carbonas Saccharata
,, et Ammonii Citras
,, et Quininæ Citras
,, Peroxidum Hydratum
,, Phosphas
,, Sulphas
,, Sulphas Exsiccata
,, Sulphas Granulata
Ferrum Redactum
,, Tartaratum
Liquor Ferri Acetatis
,, ,, ,, Fortior
,, ,, Dialysatus
Liquor Ferri Perchloridi
,, ,, ,, Fortior
,, ,, Pernitratis
,, ,, Persulphatis
Mistura Ferri Aromatica
,, ,, Composita
Pilula Aloes et Ferri
,, Ferri Carbonatis
,, ,, Iodidi
Syrupus Ferri Iodidi
,, ,, Phosphatis
Tinctura Ferri Acetatis
,, ,, Perchloridi
Trochisci Ferri Redacti
Vinum Ferri
Vinum Ferri Citratis

FERRUM REDACTUM.

Reduced Iron.

Metallic iron, with a variable amount of oxide of iron.

Take of
Strong Solution of Perchloride of Iron
Solution of Ammonia
Zinc, granulated
Sulphuric Acid
Chloride of Calcium
Distilled Water
} of each . . a sufficiency

Dilute the strong solution of perchloride of iron with five volumes of water; pour the mixture into such a quantity of solution of ammonia, diluted with five volumes of water, that the whole after thorough stirring has a distinct odour of ammonia. Wash the precipitated ferric hydrate until the washings are no longer rendered cloudy by solution of nitrate of silver. Dry the precipitate.

Introduce the resulting ferric oxyhydrate into an iron tube, confining it to the middle part of the tube by plugs of asbestos. Pass the tube through a furnace, and when it has been raised to a strong but not bright red heat, cause it to be traversed by a stream of hydrogen gas developed by the action on the zinc of some of the sulphuric acid diluted with eight times its volume of water. The gas before entering the tube must be rendered quite dry by being made to pass first through the remainder of the sulphuric acid, and then through a tube eighteen inches long packed with small fragments of the chloride of calcium. The farther end of the iron tube is to be connected by a cork with a bent tube dipping under water; and when the hydrogen is observed to pass through the water at about the rate that it bubbles through the sulphuric acid, the furnace is to be allowed to cool down to the temperature of the atmosphere, a slow current of hydrogen being still continued. The reduced iron is then to be withdrawn, and enclosed in a dry well-stoppered bottle.

If air be allowed
to come in contact
with the finely
divided iron
at the high temp:
the iron would ignite

Characters and Tests.—A fine greyish-black powder, strongly attracted by the magnet, and exhibiting metallic streaks when rubbed with firm pressure in a mortar. It dissolves in hydrochloric acid with the evolution of hydrogen, and without any smell of sulphuretted hydrogen, and the

absence of sulphides

$$Fe_2O_3 \cdot H_2O + 3H_2 = Fe_2 + 4H_2O.$$

solution gives a light-blue precipitate with the ferrocyanide of potassium. Ten grains added to an aqueous solution of fifty grains of iodine and fifty grains of iodide of potassium, and digested in a small flask and gently heated, leaves not more than five grains undissolved, which should be entirely soluble in hydrochloric acid.

Dose.—1 to 5 grains.

Preparation.

Trochisci Ferri Redacti, 1 grain in each lozenge.

FERRUM TARTARATUM.

Tartarated Iron.

Dissolves with difficulty in cold water; best to put it in a mortar + pour hot water on it. Never forms a clear solution with tap water!

Synonyms.—Ferri Potassio-tartras; Ferrum Tartarizatum.

Take of

Solution of Persulphate of Iron .	6 fluid ounces
Solution of Ammonia . . .	11 fluid ounces
Acid Tartrate of Potassium, in powder	2 ounces
Distilled Water	a sufficiency

Mix the solution of ammonia with three pints of distilled water, and to this add gradually the solution of persulphate of iron previously diluted with two pints of distilled water, stirring constantly and briskly. Let the mixture stand for two hours, stirring it occasionally, then put it on a calico filter, and when the liquid has drained away wash the precipitate with distilled water until that which passes through the filter ceases to give a precipitate with chloride of barium. Mix the washed and drained precipitate intimately with the acid tartrate of potassium in a porcelain dish, and let the mixture stand for twenty-four hours; then, having applied heat, not exceeding 140° F. (60° C.), add gradually a pint of distilled water, and stir constantly until nothing more will dissolve. Filter; evaporate at a temperature not exceeding 140° F. (60° C.) to the consistence of syrup, and dry it in thin layers on flat porcelain or glass plates in a drying closet at not much above

100° F. (37°·8 C.) Remove the dry salt in flakes, and keep it in stoppered bottles.

Characters and Tests.—Thin transparent scales of a deep garnet colour, slightly sweetish and astringent in taste, soluble in water and sparingly soluble in spirit. The aqueous solution, when acidulated with hydrochloric acid, gives a copious blue precipitate with the ferrocyanide, but none with the ferricyanide of potassium. When the salt is boiled with solution of soda, ferric hydrate separates, and the filtered solution when slightly acidulated by acetic acid gives, as it cools, a crystalline deposit. By incinerating fifty grains of it at a red heat, washing what is left with distilled water, and again incinerating, a residue of peroxide of iron is obtained weighing about 15 grains.

Absence of ferrous compds.

Dose.—5 to 10 grains.

FICUS.

N. O. Artocarpaceae.

Fig.

The dried fruit of Ficus Carica, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 228. Indig: Asia Minor
Cult. in warmer parts of Europe + Ameri

Characters.—The fig consists of the enlarged hollow succulent receptacle, bearing very numerous seed-like achenes on its inner surface. It is compressed, irregular in form, soft, tough, more or less translucent, brownish or yellowish, and covered with a saccharine efflorescence. Taste luscious; odour fruity and pleasant.

Preparation.—Confectio Sennæ, 12 parts in 75.

300. P.C. Grape sugar (up to 70%.) gum + moisture about 16%.

FILIX MAS.

N. O. Filices.

Male Fern.

The rhizome with the persistent bases of the petioles of Aspidium Filix-mas, *Swartz*; *Moore and Lindl. Ferns*

Indig: Europe; districts of U.S.

of Great Britain, plates 14–17. Collected late in the autumn, divested of its scales, roots, and all dead portions, and carefully dried with a gentle heat. Should not be used if more than a year old.

Characters.—From three to six or more inches in length, and the rhizome itself from three-quarters of an inch to an inch in diameter, but, being entirely covered by the hard persistent curved angular dark brown bases of the petioles, is apparently two or more inches; brown externally, yellowish-white or brownish internally. Odour feeble but disagreeable; taste sweetish and astringent at first, but subsequently bitter and nauseous.

Preparation.—Extractum Filicis Liquidum.

P.C. Fatty oil, Filicic acid, Tannic acid.

FŒNICULI FRUCTUS.

Fennel Fruit. N.O. Umbelliferæ.

The dried fruit of cultivated plants of Fœniculum capillaceum, *Gilib.* (Fœniculum vulgare, *Gaert.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 123. Levant + S. Europe.

Characters.—From one-fifth to about two-fifths of an inch long, oblong or ovoid-oblong, more or less curved, capped by a conspicuous stylopod and two styles, smooth, greenish-brown or brown; odour aromatic; taste aromatic, sweet, and agreeable. The fruit is readily separated into its two mericarps, each of which has five prominent ridges of which the lateral are the broadest, and four vittæ in the grooves, and two on the commissure.

Preparations.

Aqua Fœniculi	1 pound to 1 gallon
Pulvis Glycyrrhizæ Compositus .	1 part in 12

P.C. 2-6% Vol: oil 12 Fixed oil; sugar mucilage.

GALBANUM.

N.O. Umbelliferæ.

Galbanum.

Spontaneous exudation

A gum-resin obtained from Ferula galbaniflua, *Boiss. and Buhse*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 128; Ferula rubricaulis, *Boiss.*; and probably other species. Persia

Characters.—In tears or in masses of agglutinated tears. The tears are roundish or irregular in form, and vary in size from that of a lentil to a hazel nut, although rarely exceeding that of a pea; yellowish-brown, orange-brown, or yellowish-green; more or less translucent, usually rough and dirty on the surface, hard and brittle in cold weather, but softening in the summer, and by the heat of the hand becoming ductile and sticky. The masses, which commonly contain pieces of root, stem, and other impurities, are usually hard, compact, irregular in form, yellowish-brown, dark brownish-yellow, or rarely greenish. The odour is peculiar, aromatic, and not disagreeable; taste bitter, unpleasant, and somewhat alliaceous.

Preparations.

Emplastrum Galbani . . .	1 part in 11
Pilula Asafœtidæ Composita . .	1 part in 3½

P.C. 6-9% Vol: oil 60-66% resin; yields on dry distillation umbelliferon.

GALLA.

N.O. Cupuliferæ.

Galls.

Excrescences on Quercus lusitanica, *Webb*, *var.* infectoria (Quercus infectoria, *Oliv.*), caused by the puncture and deposit of an egg or eggs of Cynips Gallæ tinctoriæ, *Oliv.*; *Steph. and Church. Med. Bot.* plate 152. Indig: to Asia M + G + several Mediterranean island

An aggregation of diseased product.

Characters.—Hard, heavy, subglobular, from half an inch to three-quarters of an inch or more in diameter, tuberculated on the surface, the tubercles and intervening spaces being smooth; dark bluish-green or dark olive-green externally, yellowish or brownish-white within, with a small central

P.C About 70% gallotannic acid + about 3% gallic acid. Resin. Suga

After perforation the galls become lighter in colour, under the influence of air the tannin becomes converted to gallic acid.

cavity. No odour; taste intensely astringent, followed by some degree of sweetness.

Preparations.

Acidum Gallicum	
,, Tannicum	
Tinctura Gallæ . . .	54½ grains to 1 fluid ounce
Unguentum Gallæ . .	80 grains to 1 ounce
,, ,, cum Opio	80 grains to 1 ounce, nearly

GELSEMIUM.

Yellow Jasmine. N.O. Loganiaceæ.

The dried rhizome and rootlets of Gelsemium nitidum, *Michaux* (Gelsemium sempervirens, *Aiton*); *Bentl. and Trim. Med. Pl.* vol. iii. plate 181. Southern U.S.

Characters.—Nearly cylindrical, from half an inch to six inches or more in length, and commonly from a quarter to three-quarters of an inch in diameter, with small rootlets attached to, or mixed with, the larger pieces; light yellowish-brown externally, and marked longitudinally by dark purplish lines; fracture splintery; bark thin, presenting silky fibres in its liber, and closely attached to a pale yellow porous woody axis, with evident medullary rays, and with or without pith. Odour somewhat narcotic and aromatic; taste bitter.

Dose.—5 to 30 grains.

Preparations.

Extractum Gelsemii Alcoholicum | Tinctura Gelsemii

P.C. Vol: oil gelsemine gelseminine gelsemic acid resin starch.

GENTIANÆ RADIX.

Gentian Root. N.O. Gentianaceæ.

The dried root of Gentiana lutea, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 182. Mountains of C+S. Europe.

Characters and Test.—In more or less cylindrical pieces or longitudinal slices, from a few inches to a foot or more in length, and from half an inch to about an inch thick; wrinkled in an annular manner when the pieces have been derived from the upper part of the root, and all marked with irregular longitudinal furrows; deep yellowish-brown externally, yellowish or reddish-yellow within; tough and brittle when dry. Bark thick, reddish, and separated from the central woody portion, which is somewhat spongy, by a dark-coloured cambium zone. Odour heavy and peculiar; taste at first sweetish, but ultimately very bitter. An infusion when cool is not coloured blue by solution of iodine.

Preparations.

Extractum Gentianæ	
Infusum Gentianæ Compositum .	110 grains to 1 pint
Tinctura Gentianæ Composita .	1½ ounce to 1 pint

P.C. Gentiopicrin ·1 % Gentisic acid Pectin + uncrystallizable sugar.

GLYCERINUM.

Glycerine.

A sweet principle, $C_3H_5(HO)_3$, obtained by reaction of fats and fixed oils with aqueous fluids, and containing a small percentage of water. (5 %)

Characters.—A clear colourless fluid, oily to the touch, without odour, of a sweet taste; freely soluble in water and in alcohol. When decomposed by heat it evolves intensely irritating vapours. Specific gravity about 1·25. Its solution is not affected by nitrate of silver, sulphydrate of ammonium, oxalate of ammonium, or chloride of barium, and does not alter the colour of moistened blue or red litmus paper. Shaken with an equal volume of sulphuric acid, no coloration, or only a very slight straw coloration, should result. When gently heated with diluted sulphuric acid, no rancid odour is produced. Treated with pure Zn + HCl + the resulting gas direct on to paper moistened with $AgNO_3$ or $HgCl_2$ the latter should not be reduced — abs. of As.

Absence of organic matter

Absence of formic or butyric acid.

Dose.—1 to 2 drachms.

$C_3H_5(OH)_3$ + heat = $C_3H_4O + 2H_2O$.

A "Glycerine" is a solution of an active medicine in glycerine sometimes diluted with water.

Preparations.

Extractum Cinchonæ Liquid.
Glycerinum Acidi Carbolici
,, ,, Gallici
,, ,, Tannici
,, Aluminis
,, Amyli
,, Boracis
,, Plumbi Subacet.
,, Tragacanthæ
Lamellæ, in all
Linimentum Iodi
,, Potassii Iodidi cum Sapone
Mel Boracis
Pilula Aloes et Myrrhæ
,, Rhei Composita
,, Saponis Composita
Tinctura Kino
Unguentum Iodi

GLYCERINUM ACIDI CARBOLICI.

Glycerine of Carbolic Acid.

1 – 6 by weight

Take of

Carbolic Acid .	1 ounce	or	. . 1 part
Glycerine .	4 fluid ounces . .	,,	. . 4 fluid parts

Rub them together in a mortar until the acid is dissolved; or the mixture may be warmed.

GLYCERINUM ACIDI GALLICI.

If this + the following preparation be overheated pyrogallol is formed

Glycerine of Gallic Acid.

Take of

Gallic Acid .	1 ounce	or	. . 1 part
Glycerine .	4 fluid ounces . .	,,	. . 4 fluid parts

1 - 6 by wt.

Stir them together in a porcelain dish, and apply a temperature not exceeding that of a water-bath until complete solution is effected.

GLYCERINUM ACIDI TANNICI.

1 - 6 by wt.

Glycerine of Tannic Acid.

Take of

Tannic Acid .	1 ounce	or	. . 1 part
Glycerine .	4 fluid ounces . .	,,	. . 4 fluid parts

Much of the commercial glycerine contains a trace of iron. This will cause discolouration in above preps.

Stir them together in a porcelain dish, and apply a temperature not exceeding that of a water-bath until complete solution is effected.

1 in 7¼ by weight.

GLYCERINUM ALUMINIS.

Glycerine of Alum.

Ammonia-alu dissolves more rapidly potash alum. This preparation is not easily filtered; it is sha with a little p silica before filtration it is obtain quite bright. The paper + silica must be free from iron (which is pr ent in gray papers)

Alum being a dehydrating agent care must be taken not to overheat the preparation or acrolein (C_3H_4O) will be formed.

Take of

Alum, in powder	1 ounce	or ..	1 part
Glycerine . .	5 fluid ounces ..	,, ..	5 fluid parts

Stir them together in a porcelain dish, gently applying heat until solution is effected. Set aside; and pour off the clear fluid from any deposited matter.

Filters best while warm.

GLYCERINUM AMYLI.

Glycerine of Starch.

Take of

Starch . .	1 ounce	or ..	1 part
Glycerine . .	5 fluid ounces ..	,, ..	5 fluid parts
Distilled Water .	3 fluid ounces ..	,, ..	3 fluid parts

Stir them together in a porcelain dish, and apply heat, stirring constantly, until the starch particles are completely broken and a translucent jelly is formed.

The finished product should not be milky nor burnt.

Use a sand-bath.

Preparations in which Glycerinum Amyli is used.

Suppositoria Acidi Carbolici cum Sapone
,, ,, Tannici ,, ,,
,, Morphinæ cum Sapone

1 in 8 by wt.

GLYCERINUM BORACIS.

Glycerine of Borax.

This preparation is acid. H_3BO_3 is liberated + $NaBO_2$ formed.

Take of

Borax, in powder	1 ounce	or ..	1 part
Glycerine . .	4 fluid ounces ..	,, ..	4 fluid parts
Distilled Water .	2 fluid ounces ..	,, ..	2 fluid parts

Rub them together in a mortar until the borax is dissolved; or heat gently until solution is effected.

$$2 NaBO_2 \cdot B_2O_3 + 3 H_2O = 2 NaBO_2 + 2 H_3BO_3$$

GLYCERINUM PLUMBI SUBACETATIS.

Glycerine of Subacetate of Lead.

Take of

Acetate of Lead	5 ounces
Oxide of Lead, in powder	$3\frac{1}{2}$ ounces
Glycerine	1 pint
Distilled Water	12 fluid ounces

In making a definite & smaller quantity of this prep: note that the volume of the product about equals the volume of the glycerine to be used.

Mix together and boil for a quarter of an hour; then filter and evaporate until the water is dissipated. Evaporate by steam, water, or sandbath but on no account allow the temp: to rise above 120°C or the glycerine will be decomposed.

the liquid
mences to boil
flame
it only simmers
water
time to time to make up for loss
poration.

Preparation.—Unguentum Glycerini Plumbi Subacetatis.

Filter & evap q. s. (about the vol: of gly: used).

GLYCERINUM TRAGACANTHÆ.

Glycerine of Tragacanth.

Take of

Tragacanth, in powder	110 grains	or	3 parts
Glycerine	1 fluid ounce	,,	12 fluid parts
Distilled Water	74 fluid grains	,,	2 fluid parts

Mix the tragacanth with the glycerine in a mortar, add the water, and rub until a translucent homogeneous jelly is produced.

GLYCYRRHIZÆ RADIX.

Liquorice Root. N.O. Leguminosæ.

The root and subterranean stems or stolons, fresh and dried, of Glycyrrhiza glabra, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 74. Hab: S. Europe & W. Asia.

Characters.—When fresh in long cylindrical pieces of varying thickness, smooth and yellowish-brown or somewhat reddish externally, yellow and juicy internally, very flexible, easily cut, and consisting of a thick cortical portion surrounding a central woody axis, which in the case of the stem contains a small pith. Odour peculiar, earthy, and somewhat sickly; taste strong, peculiar, sweet. When dried it is either peeled or unpeeled. In the latter case it has essentially the same characters as the fresh root, except that it is somewhat darker, furrowed longitudinally, and has a slightly acrid and, in some cases, a feebly bitter taste combined with the characteristic sweetness; but when peeled it has a yellow colour externally, and there is no acridity.

Preparations.

Confectio Terebinthinæ . .	1 part in 4, nearly
Decoctum Sarsæ Compositum .	¼ ounce to 1 pint
Extractum Glycyrrhizæ	
,, ,, Liquidum	
Infusum Lini	100 grains to 1 pint
Pilula Hydrargyri . . .	1 part in 6
,, Ferri Iodidi . . .	1 part in $2\frac{3}{4}$, nearly
Pulvis Glycyrrhizæ Compositus	

P.C. about 6% Glycyrrhizin (glucoside) glycyramarin sugar asparagin 3% starch resin.

GOSSYPIUM.

N.O. Malvaceæ.

Cotton Wool.

Synonym.—Cotton.

The hairs of the seed of Gossypium barbadense, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 37; and of other species of Gossypium, from which fatty matter and all foreign impurities have been removed. Tropical Asia + Africa. Cult^d. in tropical countries.

Characters and Tests.—In white soft filaments, each consisting of an elongated tubular cell, and when examined under the microscope appearing as a flattened twisted band with slightly thickened rounded edges; inodorous and tasteless. It should readily be wetted by water, to which it should not communicate either an alkaline or acid reaction. On ignition in air it burns, leaving less than one per cent. of ash.

Preparation for which Cotton Wool is used.—Pyroxylin.

P.C. chiefly cellulose.

GRANATI RADICIS CORTEX.

Pomegranate Root Bark. N.O. Myrtaceæ.

The dried bark of the root of Punica Granatum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 113. India + S.W. Asia Cultivated in subtropical countries.

Characters and Test.—In small quills or fragments, varying from two to four inches in length; outer surface yellowish-grey, wrinkled or marked with faint longitudinal striæ, or more or less furrowed with corky bands; inner surface smooth or nearly so, yellow; fracture short; no odour; taste astringent and very feebly bitter. An infusion becomes deep blackish-blue on the addition of a persalt of iron.

Preparation.—Decoctum Granati Radicis, 2 ounces to 1 pint.

P.C. Punico-tannic acid 20%; mannite sugar gum pectin
Pelletierine (alkaloid) 3 other alkaloids.

GUAIACI LIGNUM.

Guaiacum Wood. N.O. Zygophyllaceæ.

The heart-wood of Guaiacum officinale, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 41; or of Guaiacum sanctum, *Linn.* For use in pharmacy the wood, as usually imported, should be deprived of its sap-wood, and the heart-wood reduced to the form of chips, raspings, or shavings. W. Indies + W.S. America.

Characters and Tests.—The chips, raspings, or shavings, as seen in the pharmacies, are dark greenish-brown; their taste, when chewed for a short time. is acrid and somewhat aromatic; and their odour, when rubbed, and more especially when heated, agreeable and faintly aromatic. When touched with nitric acid, they assume a temporary bluish-green colour; and if moderately heated in a solution of perchloride of mercury, a bluish-green colour is also produced.

Preparation.

Decoctum Sarsæ Compositum . ¼ ounce to 1 pint

P.C. 20-25% resin.

Of late years Guaiacum has been prepared by boiling the chips with brine when the resin floats to the surface. This is of poor quality.

GUAIACI RESINA.

Guaiacum Resin.

G. officinale yields largest percentage.

The resin obtained from the stem of Guaiacum officinale, *Linn.*, or of Guaiacum sanctum, *Linn.*, by natural exudation, by incision, or by heat.

On dry distillation yields guaiacol, creosol etc.

Characters and Test.—In roundish or somewhat oval tears, or more commonly in large masses containing fragments of bark, wood, and other impurities; brownish or greenish-brown externally, and, when the surface has been rubbed and exposed to air and light, covered with a green powder. It is brittle, breaking with a clean glassy fracture; thin splinters are transparent and greenish-brown; powder greyish, but by exposure becoming green. Odour somewhat balsamic; and when chewed leaving an acrid sensation in the throat. A "solution in rectified spirit strikes a clear blue colour when "applied to the inner surface of a paring of raw potato.

Not completely soluble in alkalies.

Dose.—10 to 30 grains. Fused with KOH yields protocatechuic acid

Preparations.

Mistura Guaiaci . . .	11 grains in 1 fluid ounce
Pilula Hydrargyri Subchloridi Composita	1 part in 2½
Tinctura Guaiaci Ammoniata	88 grains in 1 fluid ounce

P.C. Guaiacic, guaiaretic, guaiaconic acids guaiac yellow. 10% betta resin little gum.

GUTTA PERCHA.

Gutta Percha.

Dichopsis G. is said to be nearly extinct (Maisch)

The concrete juice of Dichopsis Gutta (Isonandra Gutta, *Hook.*); *Bentl. and Trim. Med. Pl.* vol. iii. plate 167; and of several other trees of the natural order Sapotaceæ. Palaquium oblongifolium.

Malay penins: & islands.

Characters.—In pieces of a light-brown or chocolate colour, tough, somewhat flexible, plastic above 120° F. (48°·8 C.), insoluble in water, alcohol, alkaline solutions, or dilute acids; but almost entirely soluble in chloroform, and entirely so in oil of turpentine, carbon disulphide, or benzol.

Preparation.—Liquor Gutta Percha.

P.C. 60% gutta, a yellow resin, + a white cryst. ~~yello~~ resin.

HÆMATOXYLI LIGNUM.

Logwood. N. O. Leguminosæ.

The sliced heart-wood of Hæmatoxylon campechianum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 86. C. America Naturalized in W. Indies.

Characters.—The logs, in which form it is imported, are hard, heavy, blackish-red externally, and internally reddish-brown. The chips as directed to be used have a reddish-brown colour, a slight peculiar agreeable odour, and a sweetish astringent taste. When chewed they colour the saliva a brilliant dark reddish-pink colour.

Preparations.

Decoctum Hæmatoxyli . . 1 ounce to 1 pint
Extractum Hæmatoxyli

P.C. Haematoxylin Haematein (a product of oxidation of former)
Tannin fat resin trace of vol: oil.

HEMIDESMI RADIX.

Hemidesmus Root. N. O. Asclepiadaceæ.

The dried root of Hemidesmus indicus, *R. Br.*; *Wight, Icon. Plant. Ind. Orient.* vol. ii. plate 594. East Indies.

Characters.—In cylindrical, more or less twisted, longitudinally furrowed pieces, six inches or more in length; covered by a thin yellowish-brown or brown corky layer, which is easily separated from the other portion of the bark, the latter being frequently cracked in an annular manner. Odour fragrant, resembling that of melilot or Tonquin bean; taste sweetish and very slightly acrid.

Preparation.

Syrupus Hemidesmi . . 1 ounce to $10\frac{1}{2}$ ounces

P.C. Stearoptin starch etc.

N.O. Annelida

HIRUDO.

The Leech.

C. + W. Europe

Swedish + German 1. Sanguisuga medicinalis, *Savigny*, the Speckled Leech; and 2. S. officinalis, *Sav.*, the Green Leech.

Southern Europe
Hungarian Lowlands

Characters.—Body soft, smooth, two or more inches long, tapering to each end, plano-convex, wrinkled transversely; back olive-green with six rusty-red longitudinal stripes. 1. Belly greenish-yellow, spotted with black; 2. Belly olive-green, not spotted.

HORDEUM DECORTICATUM.

N.O. Gramineae.

Pearl Barley.

The dried seed of Hordeum distichon, *Linn*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 293; divested of its integuments. From plants cultivated in Britain.

India W. Asia

Characters.—White, rounded, with a trace of the longitudinal furrow, in which are the remains of the yellowish-brown integuments. Taste and odour farinaceous like the cereal grains generally.

Preparation.—Decoctum Hordei. Leaves 3% ash on incine

P.C. 70% starch 15% Proteids 6% Dextrin a small quant of o.

HYDRARGYRI IODIDUM RUBRUM.

Red Iodide of Mercury.

Synonyms.—Hydrargyri Biniodidum; Mercuric Iodide.

HgI_2.

The proportion ordered must be rigidly adhered to as the ppt is soluble in excess of either salt.

Take of

Perchloride of Mercury	4 ounces
Iodide of Potassium	5 ounces
Boiling Distilled Water	4 pints

Dissolve the perchloride of mercury in three pints, and the iodide of potassium in the remainder of the water, and mix the solutions. When the temperature of the mixture has fallen to that of the atmosphere, decant the supernatant liquor from the precipitate, and, having collected the latter on a filter, wash it twice with cold distilled water, and dry it at a temperature not exceeding 212° F. (100° C.)

$HgCl_2 + 2KI = HgI_2 + 2KCl.$

All mercuric salts are soluble in ether.

Characters and Tests.—A crystalline powder of a vermilion colour, becoming yellow when gently heated over a lamp on a sheet of paper; almost insoluble in water, dissolves sparingly in alcohol, but freely in ether, or in an aqueous solution of iodide of potassium. When digested with solution of soda it assumes a reddish-brown colour, and the fluid cleared by filtration and mixed with solution of starch gives a blue precipitate on being acidulated with nitric acid. Entirely volatilised at a temperature under redness.

Dose.—$\frac{1}{32}$ to $\frac{1}{8}$ grain.

Preparations.

Liquor Arsenii et Hydrargyri Iodidi .	about 1 grain in 100
Unguentum Hydrargyri Iodidi Rubri .	1 part in 28

HYDRARGYRI OXIDUM FLAVUM.

Yellow Oxide of Mercury.

Synonym.—Yellow Mercuric Oxide.

HgO.

Take of

Perchloride of Mercury . . .	4 ounces
Solution of Soda	2 pints
Distilled Water	a sufficiency

Dissolve the perchloride of mercury in four pints of distilled water, aiding the solution by the application of heat, and add this to the solution of soda. Stir them together; allow the yellow precipitate to subside; remove the supernatant liquor by decantation; thoroughly wash the precipitated oxide on a calico filter with distilled water; and finally dry it by the heat of a water-bath.

Characters and Tests.—A yellow powder readily dissolved by hydrochloric acid, yielding a solution which, with solution of ammonia, gives a white precipitate. It is entirely volatilised when heated to incipient redness, being resolved into oxygen gas and the vapour of mercury.

Absence of fixed salts as NaCl.

Preparation for which Yellow Oxide of Mercury is used.

Oleatum Hydrargyri

$HgCl_2 + 2NaHO - HgO + 2NaCl + H_2O$.

HYDRARGYRI OXIDUM RUBRUM.

Red Oxide of Mercury.

Synonyms.—Hydrargyri Nitrico-oxidum; Red Mercuric Oxide.

HgO.

Take of

Mercury, by weight . . .	8 ounces
Nitric Acid	$4\frac{1}{2}$ fluid ounces
Water	2 fluid ounces

Dissolve half the mercury in the nitric acid diluted with the water, evaporate the solution to dryness, and with the dry salt thus obtained triturate the remainder of the mercury until the two are uniformly blended together. Heat the mixture in a porcelain dish, with repeated stirring, until acid vapours cease to be evolved.

To economise the O set free by the decomposing nitrate

Characters and Tests.—An orange-red powder readily dissolved by hydrochloric acid, yielding a solution which, with solution of potash added in excess, gives a yellow precipitate, and with solution of ammonia a white precipitate. Entirely volatilised at a temperature under redness, being at the same time decomposed into mercury and oxygen. Even if this be done in a test-tube, no orange vapours are perceived.

Absence of mercuric nitrate. Add a little of a sol. of indigo sulphate. The colour should not be discharged. absence of $Hg(NO_3)_2$

Preparation.

Unguentum Hydrargyri Oxidi Rubri .	1 part in 8

$2Hg(NO_3)_2 = 2HgO + 4NO_2 + O_2$

$3Hg + 8HNO_3 = 3Hg(NO_3)_2 + 2NO + 4H_2O$

HYDRARGYRI PERCHLORIDUM.

Perchloride of Mercury.

Synonyms.—Hydrargyrum Corrosivum Sublimatum; Hydrargyri Bichloridum; Corrosive Sublimate; Mercuric Chloride.

$HgCl_2$.

Take of

Persulphate of Mercury	20 ounces
Chloride of Sodium, dried . . .	16 ounces
Black Oxide of Manganese, in fine powder	1 ounce

The object of using MnO_2 is to prevent formation of any calomel. Its action is to eliminate Cl from the excess of NaCl the chlorine converting any calomel into corrosive subli manganate of Na & a lower oxide being produced.

Reduce the persulphate of mercury and the chloride of sodium each to fine powder, and having mixed them and the oxide of manganese thoroughly by trituration in a mortar, put the mixture into an apparatus adapted for sublimation, and apply sufficient heat to cause vapours of perchloride of mercury to rise into the less heated part of the apparatus which has been arranged for their condensation.

Characters and Tests.—In heavy colourless masses of prismatic crystals, possessing a highly acrid metallic taste; more soluble in alcohol, and still more so in ether, than in water. Its aqueous solution gives a yellow precipitate with caustic potash, a white precipitate with ammonia, and a curdy white precipitate with nitrate of silver. When heated it sublimes without decomposing, or leaving any residue.

Dose.—$\frac{1}{16}$ to $\frac{1}{8}$ grain.

Preparations for which Perchloride of Mercury is used.

Hydrargyri Iodidum Rubrum
,, Oxidum Flavum
Hydrargyrum Ammoniatum
Liquor Hydrargyri Perchloridi $\frac{1}{2}$ grain to 1 fluid ounce
Lotio Hydrargyri Flava . . 18 grains to 10 fluid ounces

$HgSO_4 + 2NaCl = HgCl_2 + Na_2SO_4$

HYDRARGYRI PERSULPHAS.

Persulphate of Mercury.

Synonyms.—Hydrargyri Sulphas; Sulphate of Mercury; Mercuric Sulphate.

$HgSO_4$.

Take of

Mercury, by weight . . .	20 ounces
Sulphuric Acid	12 fluid ounces

Heat the mercury with the sulphuric acid in a porcelain vessel, stirring constantly until the metal disappears, then continue the heat until a dry white salt remains.

Characters.—A white crystalline heavy powder, rendered yellow by affusion of water. Entirely volatilised by heat.

(1) Forming Turpeth's mineral characteristic.

Preparations for which Persulphate of Mercury is used.

Hydrargyri Perchloridum | Hydrargyri Subchloridum

$Hg + 2H_2SO_4 = HgSO_4 + SO_2 + H_2O$.

(1) $+ HgSO_4 + 2H_2O = Hg_3O_2SO_4 + Hg(HSO_4)_2 + H_2SO_4$

HYDRARGYRI SUBCHLORIDUM.

Subchloride of Mercury.

Synonyms.—Calomelas; Hydrargyri Chloridum; Calomel; Mercurous Chloride.

Hg_2Cl_2

Take of

Persulphate of Mercury . . .	10 ounces
Mercury	7 ounces
Chloride of Sodium, dried . . .	5 ounces
Boiling Distilled Water . . .	a sufficiency

Moisten the persulphate of mercury with some of the water, and rub it and the mercury together until globules are no longer visible; add the chloride of sodium and thoroughly mix the whole by continued trituration. Sublime by a suitable apparatus into a chamber of such size that the calomel, instead of adhering to its sides as a crystalline crust, shall fall as a fine powder on its floor. Wash this powder with boiling distilled water until the washings cease to be darkened by a drop of sulphydrate of ammonium. Finally, dry at a temperature not exceeding 212° F. (100° C.)

absence of $HgCl_2$

Characters and Tests.—A dull-white heavy and nearly tasteless powder, sometimes rendered yellowish by trituration in a mortar; insoluble in water, spirit, or ether. Digested with solution of potash it becomes black; and the clear solution, acidulated with nitric acid, gives a copious white precipitate with nitrate of silver. Contact with hydrocyanic acid also darkens its colour. When sufficiently heated it is entirely volatilised. Warm ether which has been shaken with it in a bottle leaves, on evaporation, no residue.

with decomposition

absence of $HgCl_2$

Dose.—½ grain to 5 grains.

Preparations in which Subchloride of Mercury is used.

Lotio Hydrargyri Nigra . . .	3 grains to 1 fluid ounce
Pilula Hydrargyri Subchloridi Composita	1 part in 5
Unguentum Hydrargyri Subchloridi .	1 part in 6½, nearly

$Hg_2SO_4 + 2NaCl = 2HgCl + Na_2SO_4$

(÷) $Hg_2Cl_2 + 3NH_4HJ = NH_2Hg_2Cl + 2NH_4Cl + H_2O$

o volumes in the state of vapour (which of H would weigh 2.)
he case of Hg weigh 200 + not 400.
o is its atomic weight, is shown by the fact that this is the
inimum proportion relative to 1 of H. in which Hg. combines.

HYDRARGYRUM.

Mercury. Hg

Atomic weight 200
Molecular " 200
Ore Cinnabar.

Characters and Tests.—A metal, fluid at common temperatures, brilliantly lustrous, and easily divisible into spherical globules. Volatilises at a temperature below that of visible redness, leaving no residue. Sp. G. 13·6

Boils at 662°F
solidifies at −40 F.

Preparations containing Mercury chiefly uncombined.

Hydrargyrum cum Creta	1 part in 3
Emplastrum Ammoniaci cum Hydrargyro	1 ,, in 5
,, Hydrargyri	1 ,, in 3
Linimentum Hydrargyri	1 ,, in 6
Pilula Hydrargyri	1 ,, in 3
Suppositoria Hydrargyri	1 ,, in 6
Unguentum Hydrargyri	1 ,, in 2
,, ,, Compositum	1 ,, in 4½

Preparations containing combined Mercury.

Arsenii et Hydrargyri Iodidi, Liquor
Hydrargyri Iodidum Rubrum
,, Lotio Flava
,, ,, Nigra
,, Nitratis Liquor Acidus
,, Oxidum Flavum
,, ,, Rubrum
,, Perchloridi Liquor
,, Perchloridum
,, Persulphas
,, Subchloridum
Hydrargyrum Ammoniatum
Oleatum Hydrargyri
Pilula Hydrargyri Subchloridi Composita
Unguentum Hydrargyri Ammoniati
,, ,, Iodidi Rubri
,, ,, Nitratis
,, ,, ,, Dilutum
,, ,, Oxidi Rubri
,, ,, Subchloridi

It is imperative to pour the mercuric solution into the ammonia; if the reverse method be adopted then $NH_2HgCl \cdot HgCl_2$ is formed which is the most poisonous of the mercur-ammonium compounds.

$2HgCl_2 + 2NH_4OH = NH_2HgCl \cdot HgCl_2 + NH_4Cl + 2H_2O$.

HYDRARGYRUM AMMONIATUM.

Ammoniated Mercury.

Synonyms.—Hydrargyri Ammonio-chloridum; Hydrargyri Præcipitatum Album; Chloride of Mercuric-ammonium.

NH_2HgCl.

Take of

Perchloride of Mercury . . .	3 ounces
Solution of Ammonia . . .	4 fluid ounces
Distilled Water	a sufficiency

Dissolve the perchloride of mercury in three pints of the distilled water with the aid of heat; pour the solution into the ammonia diluted with one pint of the water, constantly stirring; collect the precipitate on a filter, and wash it well with cold distilled water until the liquid which passes through ceases to give a precipitate when dropped into a solution of nitrate of silver acidulated with nitric acid. Lastly dry the product at a temperature not exceeding 212° F. (100° C.) $HgCl_2 + 2NH_4OH = NH_2HgCl + NH_4Cl + 2H_2O$.

Characters and Tests.—An opaque white powder on which water has but little, and alcohol or ether no action. Digested with caustic potash, it evolves ammonia, acquiring a pale yellow colour, and the fluid, filtered and acidulated with nitric acid, gives a white precipitate with nitrate of silver. Boiled with a solution of stannous chloride it becomes grey, and affords globules of metallic mercury. Entirely volatilised at a temperature under redness, without fusing. It should yield 77·5 per cent. of metallic mercury.

Absence of NH_4Cl

$NH_2HgCl + NaHO = HgO + NaCl$

By cont^d trituration with water a white ppt forms of $NH_2HgCl \cdot HgO$.

Preparation.

Unguentum Hydrargyri Ammoniati . 1 part in 10

$2NH_2HgCl + H_2O = NH_2HgCl \cdot HgO + NH_4Cl$.

HYDRARGYRUM CUM CRETA.

Mercury with Chalk.

Take of

Mercury, by weight	1 ounce
Prepared Chalk	2 ounces

Fusible white ppt. is formed $NH_2HgCl \cdot NH_4Cl$ when sol of Na is added to a solution of equal parts of $HgCl_2 + NH_4Cl$

$NH_4Cl + HgCl_2 + 2KOH = NH_2HgCl + NH_4Cl + 2KCl + 2$

Rub the mercury and chalk in a porcelain mortar until metallic globules cease to be visible to the naked eye, and the mixture acquires a uniform grey colour.

Characters and Tests.—A powder of a light-grey colour; free from grittiness; insoluble in water; partly dissolved by diluted hydrochloric acid, leaving the mercury in a finely-divided state. The solution formed with hydrochloric acid is" not precipitated by the addition of stannous chloride. "Absence of HgO

Dose.—3 to 8 grains.

HYOSCYAMI FOLIA.

Henbane Leaves. N.O. Solanaceæ.

The fresh leaves and flowers, with the branches to which they are attached, of Hyoscyamus niger, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 194; also the(1) leaves separated from the branches, and flowering tops, carefully dried. Collected from biennial(1) plants, growing wild or cultivated in Britain, when about two-thirds of the flowers are expanded. Hab: Europe, Asia, Natd in some dists: N. America

(1) Gerrard has shown that this possesses very lit. - if any advantage over the annual variety

Characters and Test.—Leaves varying in length, sometimes as much as ten inches, with or without a stalk, alternate, exstipulate, triangular-ovate or ovate-oblong, acute, undulated, irregularly toothed, sinuated, or pinnatifid, pale green, and glandular-hairy, particularly on their under surface. The branches are sub-cylindrical, and also glandular-hairy. The fresh herb has a strong heavy odour, a bitter and slightly acrid taste, and the juice when dropped into the eye dilates the pupil.

P.C. Hyoscyamine, Hyoscyne.
By heating hyoscyamine for 6 hrs at or about 120°C it is converted into atropine
Mucilage albumen + chlorophyll.

Preparations.

Extractum Hyoscyami
Succus Hyoscyami
Tinctura Hyoscyami . . 2½ ounces to 1 pint

Warm the infusion pot. Tare + weigh the boiling water.
Strain through cotton wool except Kousso.
An "Infusion" is an aqueous preparation made without boiling, by subjecting a crude drug to the action of water for a specified time and straining.

INFUSUM ANTHEMIDIS.

Infusion of Chamomile.

Take of

Chamomile Flowers .	½ ounce	or . .	1 part
Boiling Distilled Water .	10 fl. ounces . .	,, . .	20 fl. parts

Infuse in a covered vessel for fifteen minutes, and strain.

Dose.—1 to 4 fluid ounces.

If infused much beyond 15 mins: it becomes a nauseous emetic instead of an aromatic bitter.

INFUSUM AURANTII.

Infusion of Orange Peel.

Take of

Bitter-Orange Peel, cut small	½ oz.	or . .	1 part
Boiling Distilled Water .	10 fl. ozs. .	,, . .	20 fl. parts

Infuse in a covered vessel for fifteen minutes, and strain.

Dose.—1 to 2 fluid ounces.

These infusions are much impaired in flavour if infused beyond the specified time.

INFUSUM AURANTII COMPOSITUM.

Compound Infusion of Orange Peel.

Take of

Bitter-Orange Peel, cut small	¼ ounce . .	or .	4 parts
Fresh Lemon Peel, cut small	56 grains .	,, .	2 parts
Cloves, bruised . . .	28 grains .	,, .	1 part
Boiling Distilled Water .	10 fl. ozs. .	,, .	160 fl. parts

Infuse in a covered vessel for fifteen minutes, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM BUCHU.

Infusion of Buchu.

Take of

Buchu Leaves, bruised .	½ ounce	or . .	1 part
Boiling Distilled Water .	10 fl. ounces . .	,, . .	20 fl. parts

The leaves being coriaceous will not admit moisture till bruised.

Infuse in a covered vessel for half an hour, and strain. Contains a qty of mucilage.

Dose.—1 to 4 fluid ounces.

INFUSUM CALUMBÆ.

Infusion of Calumba.

Take of

Calumba Root, cut small	½ ounce	or	1 part
Cold Distilled Water	10 fl. ounces	,,	20 fl. parts

Macerate in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM CARYOPHYLLI.

Infusion of Cloves.

Take of

Cloves, bruised	¼ ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	40 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 4 fluid ounces.

INFUSUM CASCARILLÆ.

Infusion of Cascarilla.

Take of

Cascarilla Bark, in No. 20 powder	1 ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	10 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM CATECHU.

Infusion of Catechu.

Take of

Catechu, in coarse powder	160 grains	or	5·3 parts
Cinnamon Bark, bruised	30 grains	,,	1 part
Boiling Distilled Water	10 fl. ounces	,,	149 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM CHIRATÆ.

Infusion of Chiretta.

Take of

Chiretta, cut small .	$\frac{1}{4}$ ounce	or . .	1 part
Distilled Water, at 120° F. (48°·9 C.) . .	10 fl. ounces . .	,, . .	40 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM CINCHONÆ ACIDUM.

Acid Infusion of Cinchona.

Synonym.—Infusum Cinchonæ.

The greater portion of the active principles are left in the marc.

Take of

Red Cinchona Bark, in No. 40 powder . .	$\frac{1}{2}$ ounce . . .	or . .	1 part
Aromatic Sulphuric Acid	1 fl. drachm .	,, . .	$\frac{1}{4}$ fl. part
Boiling Distilled Water .	10 fl. ounces .	,, . .	20 fl. parts

The alkaloids in the infusion are present as sulphates.

Infuse in a covered vessel for one hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM CUSPARIÆ.

Infusion of Cusparia.

Take of

Cusparia Bark, in No. 40 powder . . .	$\frac{1}{2}$ ounce	or . .	1 part
Distilled Water, at 120° F. (48°·9 C.) . .	10 fl. ounces . .	,, . .	20 fl. parts

Infuse in a covered vessel for one hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM CUSSO.

Infusion of Kousso.

Take of

Kousso, in coarse powder	½ ounce	or . .	1 part
Boiling Distilled Water .	8 fl. ounces . . .	,, . .	16 fl. parts

Infuse in a covered vessel for fifteen minutes. Not to be strained.

Active principle insol: in water.

Dose.—4 to 8 fluid ounces.

INFUSUM DIGITALIS.

Infusion of Foxglove.

Supposed to be the most effectual preparation of digitalis.

Take of

Foxglove Leaves, dried .	28 grains . . .	or . .	1 part
Boiling Distilled Water .	10 fl. ounces .	,, . .	156 fl. parts

Infuse in a covered vessel for fifteen minutes, and strain.

Dose.—2 to 4 fluid drachms.

INFUSUM ERGOTÆ.

Infusion of Ergot.

Take of

Ergot, crushed . .	¼ ounce	or . .	1 part
Boiling Distilled Water .	10 fl. ounces . .	,, . .	40 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM GENTIANÆ COMPOSITUM.

Compound Infusion of Gentian.

Take of

Gentian Root, sliced Bitter-Orange Peel, cut small	of each	55 grains . . or .	1 part
Fresh Lemon Peel, cut small		¼ ounce . . ,, .	2 parts
Boiling Distilled Water .		10 fl. ozs. . ,, .	80 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM JABORANDI.

Infusion of Jaborandi.

Take of

Jaborandi, cut small .	½ ounce . . . . . or . .	1 part
Boiling Distilled Water	10 fluid ounces . ,, . .	20 fluid parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM KRAMERIÆ.

Infusion of Rhatany.

Take of

Rhatany Root, in No. 40 powder . . .	½ ounce . . . . . or . .	1 part
Boiling Distilled Water .	10 fl. ounces . . ,, . .	20 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM LINI.

Infusion of Linseed.

Take of

Linseed	150 grains	or	3 parts
Dried Liquorice Root, in No. 20 powder	50 grains	,,	1 part
Boiling Distilled Water	10 fl. ounces	,,	87½ fl. parts

Infuse in a covered vessel for two hours, and strain.

INFUSUM LUPULI.

Infusion of Hop.

Take of

Hop	½ ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	20 fl. parts

Infuse in a covered vessel for one hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM MATICÆ.

Infusion of Matico.

Take of

Matico Leaves, cut small	½ ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	20 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 4 fluid ounces.

INFUSUM QUASSIÆ.

Infusion of Quassia.

Take of

Quassia Wood, in chips	55 grains	or	1 part
Cold Distilled Water	10 fl. ounces	,,	80 fl. parts

Macerate in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM RHEI.

Infusion of Rhubarb.

Take of

Rhubarb Root, in thin slices	¼ ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	40 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

The acid develops the colour + gives pleasant acidity to the preparation.

INFUSUM ROSÆ ACIDUM.

Acid Infusion of Roses.

Take of

Dispensed with Quinine becomes turbid due to deposition of Tannate of Quinine.

Dried Red Rose Petals, broken up	¼ ounce	or	2 parts
Diluted Sulphuric Acid	1 fl. drachm	,,	1 fl. part
Boiling Distilled Water	10 fl. ounces	,,	80 fl. parts

Add the acid to the water, infuse the petals in the mixture in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

Made with Ac: Nit: Dil: + sweetened is the most elegant form for administering quinine with this astringent.

INFUSUM SENEGÆ.

Infusion of Senega.

Take of

Becomes turbid on keeping due to decomposition of saponin with deposition of sapogenin.

Senega Root, in No. 20 powder	½ ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	20 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM SENNÆ.

Infusion of Senna.

Take of

Senna	1 ounce	or	2 parts
Ginger, sliced	28 grains	,,	⅛ part
Boiling Distilled Water	10 fl. ounces	,,	20 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

Preparation.—Mistura Sennæ Composita.

INFUSUM SERPENTARIÆ.

Infusion of Serpentary.

Take of

Serpentary Rhizome in No. 20 powder	¼ ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	40 fl. parts

Infuse in a covered vessel for half an hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM UVÆ URSI.

Infusion of Bearberry.

Take of

Bearberry Leaves, bruised	½ ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	20 fl. parts

Infuse in a covered vessel for one hour, and strain.

Dose.—1 to 2 fluid ounces.

INFUSUM VALERIANÆ.

Infusion of Valerian.

Take of

Valerian Rhizome, bruised	¼ ounce	or	1 part
Boiling Distilled Water	10 fl. ounces	,,	40 fl. parts

Infuse in a covered vessel for one hour, and strain.

Dose.—1 to 2 fluid ounces.

An "injection" is a lotion applied to internal organs by means of a syringe.
A "hypodermic injection" is a powerful solution of an alkaloid which is used by injecting it under the skin by means of a specially constructed syringe, so as to introduce the medicine more rapidly into the blood.

INJECTIO APOMORPHINÆ HYPODERMICA.

Hypodermic Injection of Apomorphine.

Camphor water acts to a small extent as a preservative.

Take of

Must be in fine powder.

Hydrochlorate of Apomorphine . .	2 grains
Camphor Water	100 minims

Dissolve and filter. The solution should be made as required for use.

The preparation is not very stable however.

A powerful emetic.

Dose, by subcutaneous injection.—2 to 8 minims.

INJECTIO ERGOTINI HYPODERMICA.

Hypodermic Injection of Ergotin.

Take of

Ergotin . .	100 grains . . . . . . or	. . 1 part
Camphor Water .	200 fluid grains . . ,,	. . 2 fluid parts

Dissolve by stirring them together. The solution should be made as required for use.

Dose, by subcutaneous injection.—3 to 10 minims.

INJECTIO MORPHINÆ HYPODERMICA.

Hypodermic Injection of Morphine.

A solution of acetate of morphine containing one grain of the acetate in ten minims of the injection.[1]

Take of

Hydrochlorate of Morphine	. .	92 grains
Solution of Ammonia	of each . .	a sufficiency
Acetic Acid . .		
Distilled Water .		

Liable to deposit basic acetate; a small proportion of S. V. R. & glycerine prevents this.

Dissolve the hydrochlorate of morphine in two ounces of distilled water, aiding the solution by gently heating; then e careful to cool the lution before adding the ammonia.

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[1] It contained 1 grain in 12 minims in B. P. Additions, 1874.

Use a bone knife.

add solution of ammonia so as to precipitate the morphine, and render the liquid slightly alkaline; allow it to cool; collect the precipitate on a filter, wash it with distilled water, and allow it to drain; then (2) transfer the morphine to a small porcelain dish with about an ounce of distilled water, apply heat gently, and carefully add acetic acid until the morphine is dissolved, and a very slightly acid solution is formed. Add now sufficient distilled water to make the solution measure exactly two fluid ounces. (3) Filter and preserve the product in a stoppered bottle excluded from the light.

(2) Without breaking the filter.

(3) Through the paper previously used. This will then dissolve any morphine still adhering to the paper. The final product should only be faintly acid.

Characters and Tests.—A clear solution free from any solid particles. Very slightly acid to test paper. A fluid drachm of it rendered slightly alkaline by the addition of solution of ammonia, yields a precipitate of morphine which, after being washed and dried, should weigh 4·25 grains, corresponding to six grains of acetate of morphine.

Dose, by subcutaneous injection.—Commencing with from 1 to 2 minims.

1 pt. of alcohol 2 pts. $Na_2CO_3 \cdot 10H_2O$ + 10 pts H_2O, the whole heated to 150°F. + 1 pt. of iodine added in small portions. When the solution becomes colourless it is poured into a beaker + allowed to settle. The iodoform collected on a filter, thoroughly washed + dried with filtering paper.

IODOFORMUM.

Iodoform.

CHI_3.

A product of the action of iodine on a mixture of alcohol and solution of carbonate of potassium, or preferably of KOH.

Characters and Tests.—Shining, lemon-yellow, crystalline scales; somewhat greasy to the touch; having a persistent and disagreeable odour and flavour. Very slightly soluble in cold water, more soluble in rectified spirit, soluble in chloroform or ether, readily and entirely soluble in warm ether; the solutions being neutral to litmus paper. When heated it first melts to a brown liquid, then gives off brown and violet vapours, leaving a black residue which entirely disappears on continued ignition. Warmed with an alcoholic solution of potash and the resulting fluid acidified by nitric acid, iodine is liberated, the mixture acquiring a brown colour or, when cold, a blue colour on the addition of mucilage of starch.

Dose.—$\frac{1}{2}$ to 3 grains.

${}_2H_5OH + 3K_2CO_3 + 4I_2 = CHI_3 + HCOOK + 5KI + 2H_2O + 3CO_2$.

Preparations.

Suppositoria Iodoformi .	3 grains in each suppository
Unguentum Iodoformi .	1 part in 10

IODUM.

Iodine.

A non-metallic element obtained from the ashes of sea-weeds and from mineral iodides and iodates.

Characters and Tests.—In laminar crystals, of a peculiar odour, dark colour, and metallic lustre, which, when heated, yield a beautiful violet-coloured vapour; very sparingly soluble in water, but freely dissolved by alcohol, by ether, and by a solution of iodide of potassium. The aqueous solution strikes a deep-blue colour with starch. It sublimes without leaving any residue, and the portion that first comes over does not include any slender colourless prisms emitting a pungent odour. 12·7 grains dissolved in an ounce of water containing fifteen grains of iodide of potassium, requires for complete decoloration 1000 grain-measures of the volumetric solution of hyposulphite of sodium.

Absence of cyanide of iodine

Preparations containing Iodine.

Arsenii Iodidum
Emplastrum Plumbi Iodidi
Hydrargyri Iodidum Rubrum
Iodoformum
Linimentum Iodi
,, Potassii Iodidi cum Sapone
Liq. Hydrarg. et Arsen. Iod.
Liquor Iodi
Pilula Ferri Iodidi
Plumbi Iodidum
Potassii Iodidum
Sodii Iodidum
Suppositoria Iodoformi
Sulphuris Iodidum
Syrupus Ferri Iodidi
Tinctura Iodi
Unguentum Hydrarg. Iod. Rub.
,, Iodi
,, Iodoformi
,, Plumbi Iodidi
,, Potassii Iodidi
,, Sulphuris Iodidi
Vapor Iodi

IPECACUANHA.

N.O. Rubiaceæ.

Ipecacuanha.

The dried root of Cephaëlis Ipecacuanha, *A. Rich.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 145.

Hab: Brazil to Bolivia & New Granada in damp forests
cultivated in India

Characters.—In more or less twisted pieces, usually from two to four inches long, and about the size of a small writing quill. It consists of two parts, namely, a central inert whitish woody axis, and a thick cortical or active portion, which is brownish, greyish-brown, or reddish-brown, irregularly annulated, and having a resinous or waxy fracture. Taste somewhat acrid and bitter; odour slight and peculiar, more especially when powdered.

Dose.—As an expectorant, ½ to 2 grains; as an emetic, 15 to 30 grains.

Preparations.

Pilula Conii Composita . .	1 part in 6, nearly
,, Ipecacuanhæ cum Scilla .	1 part in 23, about
Pulvis Ipecacuanhæ Compositus .	1 part in 10
Trochisci Ipecacuanhæ . .	¼ grain in each lozenge
,, Morphinæ et Ipecacuanhæ	$\frac{1}{12}$ grain in each lozenge
Vinum Ipecacuanhæ . . .	22 grains to 1 fluid ounce

P.C. Emetine 1·2%. Choline, ipecacuanhic acid (glucoside) resin pectin starch. saccharin.

JABORANDI.

Jaborandi.

Synonym.—Pilocarpi Foliola. N.O. Rutaceæ.

The dried leaflets of Pilocarpus pennatifolius, *Lemaire*; *Pharm. Journ.* ser. 3, vol. v. page 582, plate. Brazil near Pernambuco

Characters.—Leaflets very shortly stalked, usually four inches or more in length, oval-oblong or oblong-lanceolate, somewhat unequal at the base, obtuse and emarginate, slightly revolute and entire at the margins, coriaceous. Upper surface glabrous, except when young, dull green; under surface paler, often somewhat hairy, with a very prominent midrib, and seen to be marked irregularly all over with pellucid dots when held against the light. Odour when bruised slightly aromatic; taste on chewing slightly bitter and aromatic at first, but subsequently pungent and increasing the flow of saliva.

Dose of the powder.—5 to 60 grains.

Preparations.

Extractum Jaborandi
Infusum Jaborandi
Pilocarpinæ Nitras
Tinctura Jaborandi

P.C. ¼ to ½ % Pilocarpine Vol: Oil.

JALAPA.

N. O. Convolvulaceæ. Jalap.

The dried tubercules of Ipomœa Purga, *Hayne* (Exogonium Purga, *Bentham*); *Bot. Mag.* vol. lxxiii. plate 4280. Eastern Mexico.

Characters and Test.—Irregularly oblong, somewhat ovoid, napiform, or rarely fusiform, hard, compact, varying much in size, the larger frequently incised, or cut into halves or quarters. Externally dark brown, more or less irregularly furrowed and wrinkled, and marked with paler-coloured transverse lines or scars; internally dirty-yellowish or brownish, and frequently marked with dark brown irregular concentric circles. Odour faint, peculiar, and smoky, increased by rubbing or powdering; taste sweetish, acrid, and nauseous. Treated as for the preparation of Resin of Jalap, not less than ten per cent. of resin should be obtained, of which not more than one-tenth should be soluble in ether. Absence of Tampico resin.

Dose.—10 to 30 grains.

Preparations.

Extractum Jalapæ	
Pulvis Jalapæ Compositus .	1 part in 3
,, Scammonii Compositus	3 parts in 8
Resina Jalapæ	
Tinctura Jalapæ . . .	54½ grains to 1 fluid ounce

P.C. Resin up to 15–22%. starch gum sugar.

JALAPÆ RESINA.

Resin of Jalap.

Take of

Jalap, in No. 40 powder . . .	8 ounces
Rectified Spirit	a sufficiency
Distilled Water	a sufficiency

Digest the jalap with sixteen fluid ounces of the spirit in a covered vessel, heating gently, for twenty-four hours; then transfer to a percolator, and, when the tincture ceases to pass, continue the percolation with successive portions of spirit until it ceases to dissolve anything more. Add to the tincture four fluid ounces of the water, and distil off the spirit by a water-bath. Remove the residue while hot to an open dish, and allow it to become cold. Pour off the supernatant fluid from the resin, wash this two or three times with hot water, and dry it on a porcelain plate by the heat of a stove or water-bath.

Characters and Tests.—In dark-brown opaque fragments, translucent at the edges, brittle, breaking with a resinous fracture, readily reduced to a pale-brown powder, sweetish in odour, acrid in the throat, easily soluble in rectified spirit, insoluble in oil of turpentine. The powder yields little or nothing to warm water, and not more than ten per cent. to ether. Absence of Tampico resin.

Dose.—2 to 5 grains.

Preparation.—Pilula Scammonii Composita.

KAMALA.

Kamala. , N. O. Euphorbiaceæ.

A powder which consists of the minute glands and hairs obtained from the surface of the fruits of Mallotus philippinensis, *Müll. Arg.* (Rottlera tinctoria, *Roxb.*); *Roxb. Corom. Pl.* plate 168. | India Arabia Ceylon | E. China Australia E. Africa.
Principally shipped from Kurrachee + Bombay

Characters and Test.—A fine granular mobile powder of a brick-red or madder colour, and nearly tasteless and inodorous. Water has scarcely any effect on it, even at a boiling temperature, but it forms deep red solutions with alcohol, ether, or chloroform. When examined by the microscope it is seen to consist of irregular spherical flattened or depressed garnet-red glands with wavy surfaces, mixed with nearly colourless thick-walled stellate hairs. On ignition in air it should yield four or five, or at most ten, per cent. of ash.

Dose.—30 grains to ¼ ounce.

P.C. About 80% resin + a little tannin.

KINO.

N.O. Leguminosæ.

Kino.

The juice obtained from incisions made in the trunk of Pterocarpus Marsupium, *Roxb.*, *Roxb. Corom. Pl.* plate 116, inspissated without artificial heat. E. Indies
India + Ceylon
Malabar Coast.

Characters.—In small angular glistening opaque reddish-black brittle fragments, which in thin laminæ and at the edges are transparent and ruby-red; inodorous, very astringent, and when chewed sticking to the teeth and tinging the saliva blood-red. Almost entirely soluble in rectified spirit. It yields little or nothing to ether.

Dose.—10 to 30 grains.

Preparations.

Pulvis Catechu Compositus .	1 part in 5
,, Kino Compositus .	$3\frac{3}{4}$ parts in 5
Tinctura Kino . . .	2 ounces to 1 pint

P.C. Kinotannic acid Kino red Pyrocatechin (trace)

KRAMERIÆ RADIX.

N.O. Polygalaceæ.

Rhatany Root.

Bolivia + Peru. The dried root of (1) Peruvian Rhatany, Krameria triandra, *Ruiz and Pavon, Fl. Peruv.* vol. i. plate 93; or of (2) Savanilla Rhatany, Krameria Ixina, *Linn.* var. granatensis, Triana (Krameria tomentosa, *St. Hil.*) New Granada.

Characters.—1. Peruvian Rhatany is in branched or unbranched pieces, varying in length and thickness. It consists of a readily separable bark which varies in thickness from about one-twentieth to one-tenth of an inch, rough and scaly except in the smaller pieces, dark reddish-brown externally, and bright brownish-red on its inner surface; and of a hard brownish- or reddish-yellow woody axis. 2. Savanilla Rhatany is less irregular and knotty, and not so long or thick as the former. It is well characterised by its dull purplish-brown colour, and its smooth and thicker bark, which adheres,

P.C. Krameriotannic acid (20%) Rhatanic red [illegible]

Decoction shaken with reduced iron:-
Violet colouration :- K Ixina
Reddish brown do :- K Triandra.

firmly to the wood beneath, and is usually marked at irregular intervals by deep transverse cracks. The bark of both kinds has a strongly astringent taste, and when chewed tinges the saliva red, but it has no marked odour. The wood is nearly tasteless and inodorous.

Preparations.

Extractum Krameriæ	
Infusum Krameriæ . . .	1 ounce to 1 pint
Pulvis Catechu Compositus .	1 part in 5
Tinctura Krameriæ . . .	2½ ounces to 1 pint

Average composition:-
Water 88%. Sugar 5·5%.
Fat 3%.
Albumenoids 3·5%.
Salts ·5%.

LAC.

Milk.

Hog's milk richest. [milk
Ewe's milk richer than human or cow's
Asses milk nearest to human
milk in composition.

The fresh milk of the Cow, Bos Taurus, *Linn.*

of cream
ed separate
alf an hour
in 100 c.c. of good milk.

Preparation in which Milk is used.—Mistura Scammonii.
Saccharum Lactis

Garden Lettuce
L. Sativa

LACTUCA.

Lettuce.

N.O. Compositæ.

The flowering herb of Lactuca virosa, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 160. S. + C. Europe.

Preparation.—Extractum Lactucæ. P.C. Latucin; lactucic acid lactucopicrin.

LAMELLÆ ATROPINÆ.

Discs of Atropine.

Discs of gelatine, with some glycerine, each weighing about $\frac{1}{50}$ grain, and containing $\frac{1}{5000}$ grain of sulphate of atropine.

LAMELLÆ COCAINÆ.

Discs of Cocaine.

Discs of gelatine, with some glycerine, each weighing about $\frac{1}{50}$ grain, and containing $\frac{1}{200}$ grain of hydrochlorate of cocaine.

A "lanella" is a very thin disc of gelatine with some glycerine containing an active substance used by application to the eye in opthalmic practice. Sometimes also used to produce hypodermic injections by solution in water. Melting point 95°F.

LAMELLÆ PHYSOSTIGMINÆ.

Discs of Physostigmine.

Discs of gelatine, with some glycerine, each weighing about $\frac{1}{50}$ grain, and containing $\frac{1}{1000}$ grain of physostigmine.

LARICIS CORTEX.

N.O. Coniferæ.

Larch Bark.

Indig: to forests S. + C. Europe grown to a considerable extent in Scotland + England.

The bark of Pinus Larix, *Linn.* (Abies Larix, *Lamb.*); *Lamb. Ill. Gen. Pin.* 3rd ed. plate 48. Collected in spring, deprived of its outer rough portion, and dried.

Characters.—In flattish pieces or quills of varying lengths and sizes. The outer surface is dark-red or rosy, and somewhat uneven; inner surface nearly smooth, and yellowish-white or pinkish-red according to its age; fracture close, except the liber which is somewhat fibrous, and the fractured surfaces, except internally, of a deep carmine-red colour. Odour slightly balsamic and terebinthinous; taste astringent.

Preparation.—Tinctura Laricis, 2½ ounces to 1 pint.

P.C. Tannin Resin + Laricinic acid $C_{10}H_{10}O_5$ close related to pyrogallol.

LAUROCERASI FOLIA.

N.O. Rosaceæ.

Cherry-Laurel Leaves.

The fresh leaves of Prunus Laurocerasus, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 98.

W. Asia; cult'd in S. Europe

Characters.—Thick, coriaceous, on strong short petioles, oblong or somewhat obovate, five to seven inches long, tapering towards each end, recurved at the apex, distantly but sharply serrated and slightly revolute at the margins, dark-green, smooth, and shining above, much paler beneath, and with a prominent midrib, on either side of which, towards the base, are one or two glandular depressions. Inodorous except on bruising, when they emit a ratafia-like odour.

Preparation.—Aqua Laurocerasi, 1 pound to 1 pint.

P.C. Laurocerasin (possibly a compd amygdalin
A ferment; bitter principle; tannin; sugar; gum.
After bruising + macerating in water - yields HCN + Vol: oil.

LIMONIS CORTEX.

Lemon Peel.

Synonym.—Limonis Pericarpium. N.O. Rutáceae.

Aurantiaceae.

The outer part of the rind or pericarp of the fresh fruit of Citrus Limonum, *Risso*; *Bentl. and Trim. Med. Pl.* vol. i. plate 54. N. India Cult'd in sub-tropical countries.

Characters.—Pale-yellow and more or less rough on the outer surface from the presence of glands containing volatile oil, which are imbedded in the tissue beneath; and having but a very small amount of the white spongy portion of the rind on its inner surface. Odour strong, peculiar, and fragrant; taste warm, aromatic, and bitter.

Preparations.

Infusum Aurantii Compositum .	112 grains to 1 pint
,, Gentianæ Compositum	½ ounce to 1 pint
Oleum Limonis	
Syrupus Limonis . . .	1 ounce to 1¾ pound
Tinctura Limonis . . .	2½ ounces to 1 pint

P.C. Vol: Oil, hesperidin.

LIMONIS SUCCUS.

Lemon Juice.

The freshly expressed juice of the ripe fruit of Citrus Limonum, *Risso*.

Characters.—A slightly turbid yellowish liquid, with a sharp acid taste. Specific gravity 1·035 to 1·045. Quantity of citric acid in one fluid ounce, 36 to 46 grains.

Preparation.—Syrupus Limonis, 1 pint to 3½ pounds.

P.C. Citric acid a little malic acid + mucilage.

LINI FARINA.

Linseed Meal.

Linseed reduced to powder.

Preparations.

Cataplasma Carbonis
" Conii
Cataplasma Lini
" Sinapis
Cataplasma Sodæ Chlorinatæ

LINI SEMINA.

N. O. Lineæ.

Linseed.

The dried ripe seeds of Linum usitatissimum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 39. Levant + S. Europe Cultd in most temperate countri

Characters and Test.—Small, varying in length from abcut one-sixth to one-fourth of an inch, more or less flattened, ovoid, somewhat obliquely pointed; brown, smooth, and shining on their outer surface, internally yellowish-white. Odourless, but with a mucilaginous oily taste. A decoction of linseed when cold is not made blue by solution of iodine.

Preparations.

Infusum Lini . . .	15 grains to 1 fluid ounce
Lini Farina	
Oleum Lini	

P.C. Fixed oil 30-35%. Mucilage in the epithelium 15% 25% proteids; a minute quantity of amygdalin resin wax etc

LINIMENTUM ACONITI.

Liniment of Aconite.

1 in 1½.

Take of

Aconite Root, in No. 40 powder .	20 ounces
Camphor	1 ounce
Rectified Spirit, a sufficiency to make	30 fluid ounces[1]

Mix the aconite with twenty fluid ounces of the spirit, and macerate in a closed vessel for three days, agitating occasionally; then transfer to a percolator, and, when the liquor ceases to pass, continue the percolation with more of the spirit, allowing the liquor to drop into a receiver containing the camphor, until the product measures the quantity above stated.

---

[1] Improved exhaustion of the roots of aconite and belladonna requires the increased proportions of products as compared with those of B. P. 1867.

A "Liniment" is a liquid or semi-liquid preparation used to rub or paint on a part for the purpose of producing local action. Those which are rubbed are sometimes called "embrocations" + those which are applied with a brush "paints"

LINIMENTUM AMMONIÆ.

Liniment of Ammonia.

Oleate of ammonium + glycerine are produced.

Take of

Solution of Ammonia .	1 fluid ounce	. . or . .	1 fluid part
Olive Oil . . .	3 fluid ounces	. . ,, . .	3 fluid parts

Mix with agitation until the thick emulsion at first produced becomes of such consistence that it can be poured from a bottle.

Oil acts as a lubricant.

LINIMENTUM BELLADONNÆ.

Liniment of Belladonna.

1 in 1½.

Take of

Belladonna Root, in No. 40 powder .	20 ounces
Camphor	1 ounce
Rectified Spirit, a sufficiency to make	30 fluid ounces[1]

Mix the belladonna with twenty fluid ounces of the spirit, and macerate in a closed vessel for three days, agitating occasionally; then transfer to a percolator, and, when the liquor ceases to pass, continue the percolation with more of the spirit, allowing the liquor to drop into a receiver containing the camphor, until the product measures the quantity above stated.

mixing sol: of
with oils, add the
all
nce +
ke well.

LINIMENTUM CALCIS.

Liniment of Lime.

Oleate of Calcium + Glycerine are produced.

Take of

Solution of Lime.	2 fluid ounces	. . or . .	1 fluid part
Olive Oil . .	2 fluid ounces	. . ,, . .	1 fluid part

Mix together with agitation.

LINIMENTUM CAMPHORÆ.

Liniment of Camphor.

About 1 in 4½.

Take of

Camphor . . .	1 ounce	or . .	1 part
Olive Oil . . .	4 fluid ounces	. . ,, . .	4 fluid parts

Dissolve the camphor in the oil.

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[1] See the footnote on the previous page.

Preparations in which Liniment of Camphor is used.

Linimentum Chloroformi	1 volume in 2
,, Hydrargyri	
,, Terebinthinæ Aceticum	4 volumes in 9

LINIMENTUM CAMPHORÆ COMPOSITUM.

Compound Liniment of Camphor.

1 in 9.

o½ % NH_3
in this lin:

Take of

Camphor	2½ ounces	or	20 parts
Oil of Lavender	1 fluid drachm	,,	1 fluid part
Strong Solution of Ammonia	5 fluid ounces	,,	40 fluid parts
Rectified Spirit	15 fluid ounces	,,	120 fluid parts

Dissolve the camphor and oil of lavender in the spirit; then add the solution of ammonia gradually, shaking them together until a clear solution is formed. If added suddenly camphor might be permanently pp^td.

LINIMENTUM CHLOROFORMI.

Liniment of Chloroform.

Take of

Chloroform	2 fluid ounces	,,	1 fluid part
Liniment of Camphor	2 fluid ounces	or	1 fluid part

Mix. The oil prevents the evaporation of the chloroform

LINIMENTUM CROTONIS.

Liniment of Croton Oil.

Take of

Croton Oil	1 fluid ounce	or	2 fluid parts
Oil of Cajuput	3½ fluid ounces	,,	7 fluid parts
Rectified Spirit	3½ fluid ounces	,,	7 fluid parts

Mix.

LINIMENTUM HYDRARGYRI.

Liniment of Mercury.

Take of

Ointment of Mercury	1 ounce	or	1 part
Solution of Ammonia	1 fluid ounce	,,	1 fluid part
Liniment of Camphor	1 fluid ounce	,,	1 fluid part

Mix the solution of ammonia with one half of the liniment of camphor; rub the mercurial ointment with the other half; then mix them together. "Light grey cream."

LINIMENTUM IODI.

Liniment of Iodine.

Take of

Iodine	1¼ ounce	or	5 parts
Iodide of Potassium	½ ounce	,,	2 parts
Glycerine	¼ ounce	,,	1 part
Rectified Spirit	10 fluid ounces	,,	40 fluid parts

1 in 9. Strongest prep. of Iodine in the B.P.

Dissolve the iodine, iodide of potassium, and glycerine in the spirit. The KI assists sol: of iodine + glycerine prevents too rapid evaporation + drying, + thus retains the action of the iodine for a longer period.

LINIMENTUM OPII.

Liniment of Opium.

Take of

Tincture of Opium	2 fluid ounces	or	1 fluid part
Liniment of Soap	2 fluid ounces	,,	1 fluid part

Mix and filter.

LINIMENTUM POTASSII IODIDI CUM SAPONE.

Liniment of Iodide of Potassium and Soap.

Take of

Curd Soap, cut small	2 ounces	or	16 parts
Iodide of Potassium	1½ ounce	,,	12 parts
Glycerine	1 fluid ounce	,,	8 fluid parts
Oil of Lemon	1 fluid drachm	,,	1 fluid part
Distilled Water	10 fluid ounces	,,	80 fluid parts

54½ grs in 1 fl oz.

Do not stir whilst dissolving.

Reduce the soap to fine shreds, and mix this with the water and glycerine in a porcelain dish over a water-bath. When the soap is dissolved, pour the liquid into a mortar in which the iodide of potassium has previously been powdered. Mix briskly and continue the trituration until the mixture is cold. Set aside for an hour; then rub well the oil of lemon into the cream-like product. To permit the escape of entangled air bubbles so as to avoid as much as possible the oxidation of the oil of lemon

LINIMENTUM SAPONIS.

Liniment of Soap.

Take of

Hard Soap, in fine shavings	2 ounces . . . . . . or	. . 16 parts
Camphor	1 ounce . . . . . . ,,	. . 8 parts
Oil of Rosemary	3 fluid drachms . ,,	. . 3 fluid parts
Rectified Spirit	16 fluid ounces . ,,	. . 128 fluid parts
Distilled Water	4 fluid ounces . . ,,	. . 32 fluid parts

Mix the water with the spirit, and add the oil of rosemary the soap, and the camphor. Macerate for seven days at a temperature not exceeding 70° F. (21°·1 C.) with occasional agitation, and filter. Above this temp stearate of Na is dissolved & would be pptd. in cold weather. Hence also curd soap cannot be used for this preparation

Preparation.—Linimentum Opii.

LINIMENTUM SINAPIS COMPOSITUM.

Compound Liniment of Mustard.

Take of

Oil of Mustard	1 fluid drachm . or	. 1·4 fluid part
Ethereal Extract of Mezereon	40 grains . . . . . ,,	. 1 part
Camphor	120 grains . . . . . ,,	. 3 parts
Castor Oil	5 fluid drachms . ,,	. 7 fluid parts
Rectified Spirit	4 fluid ounces . . ,,	. 44 fluid parts

8 grs in 1 fl oz

Dissolve the extract of mezereon and camphor in the spirit, and add the oil of mustard and castor oil.

LINIMENTUM TEREBINTHINÆ.

Liniment of Turpentine.

Take of

Soft Soap . .	2 ounces	or . .	2 parts
Distilled Water .	2 fluid ounces . . .	,, . .	2 fluid parts
Camphor . .	1 ounce	,, . .	1 part
Oil of Turpentine .	16 fluid ounces . .	,, . .	16 fluid parts

thoroughly Mix the soap with the water; dissolve the camphor in the oil of turpentine; then rub these together until they are thoroughly mixed. A jelly like cream.

Divide the turpentine into 2 portions 14:2 + dissolve the camphor in the 2nd part. Add the turps a few drops at a time to the soap + water mixt: taking care that each portion is thoroughly incorporated before adding the next. Then add the dissolved camphor in a similar manner stirring rapidly but lightly

LINIMENTUM TEREBINTHINÆ ACETICUM.

Liniment of Turpentine and Acetic Acid.

Take of

Oil of Turpentine .	4 fluid ounces . .	or . .	4 fluid parts
Glacial Acetic Acid .	1 ounce	,, . .	1 part [BY WT]
Liniment of Camphor	4 fluid ounces . .	,, . .	4 fluid parts

Mix.

LIQUOR ACIDI CHROMICI.

Solution of Chromic Acid.

A solution containing the equivalent of 25 per cent. of anhydrous chromic acid, or chromic anhydride, CrO_3; or 29·5 per cent. of real chromic acid, H_2CrO_4.

Take of

Chromic Acid .	1 ounce	or . .	1 part
Distilled Water .	3 fluid ounces . .	,, . .	3 fluid parts

Dissolve. If required to be filtered use asbestos or glass wool.

Characters.—An orange-red, inodorous, caustic, strongly acid liquid. Specific gravity 1·185. One fluid drachm contains chromic acid equivalent to nearly eighteen grains of chromic anhydride, CrO_3.

LIQUOR AMMONIÆ.

Solution of Ammonia.

Ammoniacal gas, NH_3, dissolved in water.

Take of

Strong Solution of Ammonia	1 pint	or	1 fluid part
Distilled Water	2 pints	,,	2 fluid parts

Mix, and preserve in a stoppered bottle.

Tests.—Specific gravity 0·959. 85 grains by weight requires for neutralisation 500 grain-measures of the volumetric solution of oxalic acid, corresponding to 10 per cent. by weight of ammonia gas, NH_3. One fluid drachm contains 5·2 grains of ammonia gas.

Preparations.

Linimentum Ammoniæ	1 volume in 4
,, Hydrargyri	1 volume in 3, nearly
Tinctura Quininæ Ammoniata	1 volume in 8

LIQUOR AMMONIÆ FORTIOR.

Strong Solution of Ammonia.

Ammoniacal gas, NH_3, dissolved in water, and constituting 32·5 per cent. of the solution. It may be obtained by the following process:—

Take of

Chloride of Ammonium, in coarse powder	3 pounds
Slaked Lime	4 pounds
Distilled Water	32 fluid ounces

Mix the lime with the chloride of ammonium, and introduce the mixture into an iron bottle placed in a metal pot surrounded by sand. Connect the iron tube, which screws air-tight into the bottle in the usual manner, by corks, glass tubes, and caoutchouc collars, with a Woulf's bottle capable of holding a pint; connect this with a second Woulf's bottle of the same

Commercially. Ammoniacal liquor of gas works is passed on to quicklime. The ammonia gas comes off with great energy accompan by tarry matters. The gases are conducted thro' long cylinders which have internal perforated plates; the tarry matters are thus condensed. The pure NH_3 is conducted into bottles containi distilled water surrounded by cold water.

size, the second bottle with a flask or other vessel of the capacity of three pints in which twenty-two ounces of the distilled water is placed, and this vessel, by means of a tube bent twice at right angles, with an ordinary bottle containing the remaining ten ounces of distilled water. Bottles 1 and 2 are empty, and the latter and the vessel which contains the twenty-two ounces of distilled water are furnished each with a siphon safety tube charged with a very short column of mercury. The heat of a fire, which should be very gradually raised, is now to be applied to the metal pot, and continued until bubbles of condensible gas cease to escape from the extremity of the glass tube which dips into the water of the flask. The process being terminated, the latter vessel will contain about forty-three fluid ounces of strong solution of ammonia.

Bottles 1 and 2 will now include, the first about sixteen, the second about ten fluid ounces of a coloured ammoniacal liquid. Place this in a flask closed by a cork, which should be perforated by a siphon safety tube containing a little mercury, and also by a second tube bent twice at right angles, and made to pass to the bottom of the terminal bottle used in the preceding process. Apply heat to the flask until the coloured liquid it contains is reduced to three-fourths of its original bulk. The product now contained in the terminal bottle will be nearly of the strength of solution of ammonia, and may be made exactly so by the addition of the proper quantity of distilled water or of strong solution of ammonia.

Characters and Tests.—A colourless liquid, with a characteristic and very pungent odour, and strong alkaline reaction. Specific gravity 0·891. 52·3 grains by weight requires for neutralisation 1000 grain-measures of the volumetric solution of oxalic acid. One fluid drachm contains 15·83 grains of ammonia gas, NH_3. When diluted with four times its volume of distilled water, it does not give precipitates with solution of lime, oxalate of ammonium, sulphydrate of ammonium, or ammonio-sulphate of copper; and, when treated with an excess of nitric acid, is not rendered turbid by nitrate of silver or by chloride of barium.

Absence of Carbonates

absence of Fe.

H_4HS

Est.

$$\underbrace{H_2C_2O_4}_{126} + \underbrace{2NH_3 \cdot H_2O}_{34} = (NH_4)_2C_2O_4 + 4H_2O$$

$\therefore$ 63 17

$\therefore$ 1 c.c. $\frac{N}{2}$ Oxalic acid = $\underline{\cdot 017\ NH_3}$

Preparations for which Strong Solution of Ammonia is used.

Ammonii Phosphas
Linimentum Camphoræ Compositum
Liquor Ammoniæ
,, Ammonii Citratis Fortior
Spiritus Ammoniæ Aromaticus
,, ,, Fœtidus
Tinctura Opii Ammoniata

LIQUOR AMMONII ACETATIS.

Solution of Acetate of Ammonium.

Deposits a fungoid on keeping.

Synonyms.—Liquor Ammoniæ Acetatis; Solution of Acetate of Ammonia.

7.45% real $NH_4C_2H_3O_2$

Acetate of ammonium, $NH_4C_2H_3O_2$, dissolved in water.

Take of

Strong Solution of Acetate of Ammonium .	4 fluid ounces	. or . .	1 fluid part
Distilled Water, sufficient to produce	20 fluid ounces .	,, . .	5 fluid parts

Mix. The solution should be stored in bottles free from lead. Specific gravity 1·022.

Dose.—2 to 6 fluid drachms.

LIQUOR AMMONII ACETATIS FORTIOR.

About 35.5% real Ammon: Acet:

Strong Solution of Acetate of Ammonium.

Take of

Carbonate of Ammonium . .	$15\frac{1}{2}$ ounces
Acetic Acid	50 fluid ounces, or a sufficiency
Distilled Water . . .	a sufficiency

$NH_4HCO_3 \cdot NH_4NH_2CO_2 + 3\,CH_3COOH = 3\,CH_3COONH_4 + 2\,CO_2 + H_2O$

est for neutrality by putting a few drops on a watch glass add a op of acetate of lead solution, if a white ppt occurs, more acetic acid equired; if no ppt warm a little of the solution in a test tube by mmersing in boiling water, agitate to assist escape of CO_2 gas test with a blue litmus; it should not become decidedly red.

Crush the carbonate of ammonium; add it gradually to about 45 ounces of the acetic acid; then add more of the acid until a neutral liquid results; lastly add sufficient distilled water to yield three pints of product. The solution should be stored in bottles free from lead.

Characters.—A little of the solution, heated in a test-tube to expel carbonic acid, should be neutral to test-papers. Specific gravity 1·073.

Dose.—25 to 75 minims.

Preparation.—Liquor Ammonii Acetatis.

LIQUOR AMMONII CITRATIS.

Solution of Citrate of Ammonium.

About 13·6% real amo: cit:

Synonyms.—Liquor Ammoniæ Citratis; Solution of Citrate of Ammonia.

Citrate of ammonium, $(NH_4)_3C_6H_5O_7$, dissolved in water.

Take of

Strong Solution of Citrate of Ammonium	5 fluid ounces	. . or . .	1 fluid part
Distilled Water, sufficient to produce .	20 fluid ounces	. ,, . .	4 fluid parts

Mix. The solution should be stored in bottles free from lead. Specific gravity 1·062.

Dose.—2 to 6 fluid drachms.

LIQUOR AMMONII CITRATIS FORTIOR.

Strong Solution of Citrate of Ammonium.

About 47·6% of real citrate.

osits a
goid growth
keeping.

Take of

Citric Acid	12 ounces
Strong Solution of Ammonia .	11 fluid ounces, or a sufficiency
Distilled Water	a sufficiency

N.B. 1 part of Citric acid yields 2 fl. pts of Liq. A Cit. Fort:

Evaporated to dryness yields acetamide.

$3.NH_4HO + H_3C_6H_5O_7 = (NH_4)_3C_6H_5O_7 + 3H_2O$

Neutralise the acid with the ammonia, adding sufficient distilled water to yield twenty-four fluid ounces of product. The solution should be stored in bottles free from lead.

Characters.—Neutral to test-papers. Specific gravity 1·209.

Dose.—$\frac{1}{2}$ to $1\frac{1}{2}$ fluid drachms.

Preparation.—Liquor Ammonii Citratis.

37·5% $SbCl_3$

LIQUOR ANTIMONII CHLORIDI.

Solution of Chloride of Antimony.

Take of

Purified Black Antimony . . .	1 pound
Hydrochloric Acid	4 pints

Place the purified black antimony in a porcelain vessel; pour upon it the hydrochloric acid, and, constantly stirring, apply to the mixture, beneath a flue with a good draught, a little heat, which must be gradually augmented as the evolution of gas begins to slacken, until the liquid boils. Maintain it at this temperature for fifteen minutes; then remove the vessel from the fire, and (1) filter the liquid through calico into another vessel, returning what passes through first, that a perfectly clear solution may be obtained. Boil this down to the bulk of two pints, and preserve it in a stoppered bottle.

(1) Residue chiefly SiO_2.

Due to presence of ferric oxide in ANT. NIGR: This is dissolved by the HCl.

Characters and Tests.—A heavy liquid usually of a yellowish-red colour. A little of it dropped into water gives a white precipitate, and the filtered solution lets fall a copious deposit on the addition of nitrate of silver. If the white precipitate formed by water be treated with sulphuretted hydrogen, it becomes orange-coloured. The specific gravity of the solution is about 1·47. One fluid drachm of it mixed with a solution of a quarter of an ounce of tartaric acid in four fluid ounces of water, forms a clear solution, which, if treated with sulphuretted hydrogen, gives an orange precipitate, weighing, when washed and dried at 212° F. (100° C.), about 22 grains.

Preparation for which Solution of Chloride of Antimony is used.

Antimonii Oxidum

I: Est: $As_2O_3 + 2I_2 + 5H_2O = 2H_3AsO_4 + 4HI$
198 508
4·95 = 12·7 = 1000 c.c.
∴ 1 c.c. $\frac{N}{10}$ = ·00495 grs As_2O_3.

(This must be neutralized with $NaHCO_3$ as it is a reducing agent)

LIQUOR ARSENICALIS.

Arsenical Solution.

Dispensed with ordinary water arsenite of Ca is pptd!

ve the As_2O_3
duced to a fine powder
ore
weighing.

Synonyms.—Liquor Potassæ Arsenitis; Fowler's Solution.

Gascoigne's solution is made with Am Carb instead of Pot Carb. a better prep.

Take of

Arsenious Acid, in powder	of each	87 grains
Carbonate of Potassium		
Compound Tincture of Lavender .	.	5 fluid drachms
Distilled Water	.	a sufficiency

Place the arsenious acid and the carbonate of potassium in a flask with ten ounces of the water, and apply heat until a clear solution is obtained. Allow this to cool. Then add the compound tincture of lavender, and as much distilled water as will make the bulk one pint.

Characters and Tests.—A reddish liquid, alkaline to test-paper, and having the odour of lavender. Specific gravity 1·010. After being acidulated with hydrochloric acid it gives, with sulphuretted hydrogen, a yellow precipitate, which is brightest when the arsenical solution has been previously diluted. 442 grains by weight (1 fluid ounce) boiled for five minutes with ten grains of bicarbonate of sodium, and when cold diluted with six fluid ounces of water to which a little mucilage of starch has been added, does not give with the volumetric solution of iodine a permanent blue colour until 875 grain-measures have been added; corresponding to about 1 per cent.[1] of arsenious acid, or to rather more than 4 grains (4⅓) in one fluid ounce. By long keeping or prolonged application of heat:-
$As_2O_3 + 2H_2O + K_2CO_3 = 2KH_2AsO_3 + CO_2$.

Dose.—2 to 8 minims.
t.v.b.d. c̄ c.

LIQUOR ARSENICI HYDROCHLORICUS.

Hydrochloric Solution of Arsenic.

the As_2O_3
ed to
powder
e weighing

Take of

Arsenious Acid, in powder	. .	87 grains
Hydrochloric Acid . . .	.	2 fluid drachms
Distilled Water . . .	.	a sufficiency

Boil the arsenious acid with the hydrochloric acid and four ounces of the water until it is dissolved, then add distilled water to make the bulk up to one pint.

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[1] It contained 1 in 109 in B. P. 1867.

No decomposition occurs. Even if $AsCl_3$ could be formed it would immediately be decomposed into $H_3AsO_3 + 3HCl$.

Characters and Tests.—A colourless liquid, having an acid reaction. Specific gravity 1·010. Sulphuretted hydrogen gives at once a bright yellow precipitate. 442 grains by weight (1 fluid ounce) boiled for five minutes with twenty grains of bicarbonate of sodium and then diluted with six fluid ounces of distilled water to which a little mucilage of starch has been added, does not give with the volumetric solution of iodine a permanent blue colour until 875 grain-measures have been added; corresponding to about 1 per cent.[1] of arsenious acid, or to rather more than 4 grains ($4\frac{1}{3}$) in one fluid ounce.

Dose.—2 to 8 minims.

This preparation like all double iodides ppts alkaloids at once.

LIQUOR ARSENII ET HYDRARGYRI IODIDI.

Solution of Iodide of Arsenium and Mercury.

This prep: is acid HI. Free iodine is formed Hence when filtered the filter paper is often rendered blue on acct: of the iodine acting on the amyloid substs. The insol matter is As.

Synonym.—Donovan's Solution.[2]

Take of

Iodide of Arsenium	of each	45 grains	
Red Iodide of Mercury			
Distilled Water		a sufficiency	

Triturate the iodides well before addin the sm qty of water.

Triturate the iodides with about an ounce and a half of distilled water until nearly all is dissolved. Pass through a filter, and wash the latter with sufficient water to produce ten fluid ounces of solution. $AsI_3 + HgI_2 = AsI_3 \cdot HgI_2$.

Characters and Tests.—A clear pale yellow liquid with a metallic flavour. Specific gravity 1·016. Sulphuretted hydrogen throws down a precipitate partially insoluble in strong nitric acid ($\leftarrow HgS$); while the dissolved part, when diluted, yields a yellow precipitate on the gradual addition of solution of sulphydrate of ammonium ($\leftarrow As_2S_3$). One fluid ounce contains about one-hundredth of a molecular weight in grains (about 1 per cent. by weight) of arsenious iodide, AsI_3, and of mercuric iodide, HgI_2.

Dose.—10 to 30 minims.

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[1] It contained 1 in 109 in B. P. 1867.

[2] The original Donovan's solution contained nearly 42 grains of each iodide in 10 fluid ounces.

LIQUOR ATROPINÆ SULPHATIS.

Solution of Sulphate of Atropine.[1]

Take of

Sulphate of Atropine	9 grains	or	1 part
Camphor Water	16½ fluid drachms	,,	99 fluid parts

Dissolve.

Dose.—1 to 4 minims.

solution does not keep well.
se of 10% S.V.R n of 10% of
ixture
% R + Glyc. (p. aeq) in
e of some
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fungoid
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LIQUOR BISMUTHI ET AMMONII CITRATIS.

Solution of Citrate of Bismuth and Ammonium.

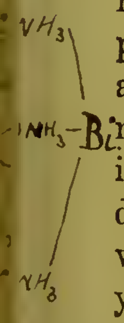
Synonym.—Liquor Bismuthi.

The Bis: Cit: of commerce is frequently a basic citrate. This gives a dull liquor.

Take of

Citrate of Bismuth	800 grains
Solution of Ammonia } of each	a sufficiency
Distilled Water }	

Rub the citrate of bismuth to a paste with a little of the water; add the solution of ammonia, gradually and with stirring, until the salt is just dissolved. Dilute with distilled water to form one pint.



Characters and Tests.—A colourless solution, with a slightly metallic taste. Specific gravity 1·07. Neutral or slightly alkaline to test-paper; is freely miscible with water; heated with alkalies evolves ammonia, and yields a white precipitate. Evaporated to dryness and the residue ignited, a charred mass with a yellow edge results; this treated with nitric acid affords a solution which should stand the tests for impurities described under 'Purified Bismuth.' Two fluid drachms of the solution mixed with an ounce of distilled water, and treated with sulphuretted hydrogen in excess, yields a black precipitate, which, when washed and dried, weighs about 7 grains.

HCl pptes BiOCl sol: in xcess of acid.

One fluid drachm contains an amount of bismuth equivalent to about 3 grains of oxide of bismuth. = 8½% Bis: Cit:

Dose.—½ to 1 fluid drachm.

Preparation.—Bismuthi et Ammonii Citras.

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[1] The strength is about 1 in 100. It was 1 in 109 in B. P. 1867.

$BiC_6H_5O_7 + 2NH_4HO = BiO(NH_4)_2C_6H_5O_7 + H_2O.$

Probably:- $BiC_6H_5O_7 + 3NH_4OH = Bi(NH_3)_3C_6H_5O_7 + 3H_2O.$

Heat is evolved due to the $CaCl_2$ combining with its water of crystallization!

LIQUOR CALCII CHLORIDI.

Solution of Chloride of Calcium.

Take of

Chloride of Calcium	88 grains	or . .	1 part
Distilled Water .	1 fluid ounce . .	,, . .	5 fluid parts

Dissolve, and filter if necessary. Specific gravity 1·145.

Dose.—15 to 50 minims.

$CaCl_2 \cdot 2H_2O + 4H_2O = CaCl_2 \cdot 6H_2O$.

When $CaCl_2 \cdot 6H_2O$ dissolves in water, cold is the result due to absorption of heat to liquefy the salt!!

LIQUOR CALCIS.

Solution of Lime.

Synonyms.—Aqua Calcis; Lime Water.

Take of

Slaked Lime	2 ounces
Distilled Water	a sufficiency

Wash the slaked lime with some of the water until a little of the filtered liquid, after being acidified with nitric acid, yields no turbidity with solution of nitrate of silver. Put the washed lime into a stoppered bottle containing one gallon of the water, and shake well for two or three minutes. After twelve hours the excess of lime will have subsided, and the clear solution may be drawn off with a siphon as it is required for use, or transferred to a green-glass bottle furnished with a well-ground stopper.

1 c.c. $\frac{N}{2}$ oxalic ac. = ·028 gr CaO.

Test.—Ten fluid ounces requires for neutralisation 180 grain-measures of the volumetric solution of oxalic acid, which corresponds to about 5 grains of lime, CaO. Acidified with nitric acid, nitrate of silver causes no precipitate. Absence of chlorides which is absolutely necessary as the water is used in preparation of Ag_2O

Dose.—1 to 4 fluid ounces.

Preparations for which Solution of Lime is used.

Argenti Oxidum
Linimentum Calcis
Lotio Hydrargyri Flava
,, ,, Nigra

Calc Hydr
" Citrate
" Tartrate
" Sulphate
} all more soluble in cold water than hot.

Vol: Est:

$H_2C_2O_4 \cdot 2H_2O + CaO + H_2O = CaC_2O_4 + 4H_2O$.

ol: Est: $CaOCl_2 + 2HCl = CaCl_2 + H_2O + Cl_2 = I_2 = 2Na_2S_2O_3 \cdot 5H_2O$.

$1cc \frac{N}{10}$ Thios: Soda — ·00355 grm Cl.

LIQUOR CALCIS CHLORINATÆ.

Solution of Chlorinated Lime.

Take of

Chlorinated Lime . .	1 pound . . or . .	1 part
Distilled Water . . .	1 gallon . . ,, . .	10 parts

Mix well the water and the chlorinated lime by trituration in a mortar, and, having poured the mixture into a stoppered bottle, let it be well shaken several times for the space of three hours. Pour out now the contents of the bottle on a calico filter, and let the solution which passes through be preserved in a stoppered bottle.

Tests.—Specific gravity about 1·055. Eighty grains by weight mixed with twenty grains of iodide of potassium dissolved in four fluid ounces of water, when acidulated with two fluid drachms of hydrochloric acid, gives a red solution which requires for the discharge of its colour not less than 450 grain-measures of the volumetric solution of hyposulphite of sodium, corresponding to about 2 per cent. of available chlorine. When the solution of chlorinated lime is made with the best chlorinated lime, and is quite fresh, it may yield about 3 per cent. of available chlorine.

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lime

LIQUOR CALCIS SACCHARATUS.

Saccharated Solution of Lime.

The lime is not washed as the solution is not used in any B.P. prep: + the presence of chlorides is not detrimental.

Take of

Slaked Lime . . .	1 ounce . . or . .	1 part
Refined Sugar, in powder	2 ounces . . ,, . .	2 parts
Distilled Water . .	1 pint . . . . ,, . .	20 parts

Mix the lime and the sugar by trituration in a mortar. Transfer the mixture to a bottle containing the water, and having closed this with a cork shake it occasionally for a few hours. Finally separate the clear solution with a siphon, avoiding unnecessary exposure to air, and keep it in a well-stoppered bottle.

Tests.—Specific gravity 1·052. 460·2 grains by weight

Triturate the powders well, then at in small portions at a time the water, shaking after each addition.

N.B. Avoid triturating the powders with water or pouring water on to the powders but proceed as B.P.

Vol: Est: $\underset{126}{H_2C_2O_4 \cdot 2H_2O} + \underset{56}{CaO} + H_2O = CaC_2O_4 + 4H_2O$

$\therefore$ 1 c.c. $\frac{N}{2}$ $H_2C_2O_4$ = ·028 grm CaO.

Liq: Calc: Sacch: is freq. used as a test reagent in the B.P.

(1 fluid ounce) requires for neutralisation 254 grain-measures of the volumetric solution of oxalic acid, which corresponds to 7·11 grains of lime, CaO, in one fluid ounce.

Dose.—15 to 60 minims.

LIQUOR CHLORI.
Solution of Chlorine.

Chlorine gas dissolved in water. The solution should be freshly prepared.

If a little $CaCO_3$ were used to develop CO_2 this would aid the solution of the Cl.

Take of

Hydrochloric Acid . . .	6 fluid ounces
Black Oxide of Manganese, in fine powder	1 ounce
Distilled Water	34 fluid ounces

Put the oxide of manganese into a gas-bottle, and, having poured upon it the hydrochloric acid diluted with two ounces of the water, apply heat gently, and, by suitable tubes, cause the gas, as it is developed, to pass through two ounces of the water placed in an intermediate small phial, and thence to the bottom of a three-pint bottle containing the remainder of the water, the mouth of which is loosely plugged with tow. As soon as the chlorine ceases to be developed, let the bottle be disconnected from the apparatus in which the gas has been generated, corked loosely, and shaken until the chlorine is absorbed. Lastly, introduce the solution into a green-glass bottle furnished with a well-fitting stopper, and keep it in a cool and dark place. = 0·6%

Absorb HCl.

Narrow mouthed delivery tube

Characters and Tests.—A yellowish-green liquid, smelling strongly of chlorine, and immediately discharging the colour of a dilute solution of sulphate of indigo. Specific gravity 1·003. Evaporated it leaves no residue. When twenty grains of iodide of potassium dissolved in an ounce of distilled water is added to 439 grains by weight (1 fluid ounce) of this preparation, the mixed solution acquires a deep red colour, which requires for its discharge 750 grain-measures of the volumetric solution of hyposulphite of sodium, corresponding to 2·66 grains of chlorine.

Dose.—10 to 20 minims.

$H_2O + Cl_2 = HClO + HCl$
$2HClO + 2HCl = 4HCl + O_2$

Decomposed on keeping

$Cl_2 + 2KI = 2KCl + I_2$
$\therefore Cl_2 = I_2 = 2Na_2S_2O_3 \cdot 5H_2O$
$\therefore$ 71   496
$\therefore$ 3·55   24·8
$\therefore$ 1 c.c. $\frac{N}{10}$ Thios: Soda = ·00355 grm Cl.

$2Na_2S_2O_3 \cdot 5H_2O = 2NaI + Na_2S_4O_6 + 10H_2$

LIQUOR EPISPASTICUS.

Blistering Liquid.

Synonym.—Linimentum Cantharidis.

Take of

Cantharides, in powder . . .	5 ounces[1]
Acetic Ether	a sufficiency

Mix the cantharides with three fluid ounces of acetic ether; pack in a percolator, and at the expiration of twenty-four hours pour acetic ether over the contents of the percolator, and allow the solution to pass slowly through until twenty fluid ounces are obtained. Keep the liquid in a stoppered bottle.

Preparation.—Collodium Vesicans.

LIQUOR FERRI ACETATIS.

Solution of Acetate of Iron. 7.4% $Fe_2(C_2H_3O_2)_6$

Synonyms.—Solution of Ferric Acetate; Solution of Peracetate of Iron.

The same strength as Tincture of Acetate of Iron.

Take of

Strong Solution of Acetate of Iron .	5 fluid ounces
Distilled Water, sufficient to produce, after admixture, ...	20 fluid ounces

Specific gravity 1·031.

Dose.—5 to 30 minims.

LIQUOR FERRI ACETATIS FORTIOR.

Strong Solution of Acetate of Iron.

Take of

Solution of Persulphate of Iron .	5 fluid ounces
Solution of Ammonia . . .	a sufficiency
Glacial Acetic Acid, liquefied . .	3 fluid ounces
Distilled Water	a sufficiency

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[1] Improved exhaustion of the cantharides requires the use of five ounces in place of the eight ounces of B. P. 1867.

$Fe_2(SO_4)_3 + 6 NH_4OH = Fe_2(OH)_6 + 3(NH_4)_2SO_4$
$Fe_2(OH)_6 + 6 CH_3COOH = 6 H_2O + Fe_2(C_2H_3O_2)_6$

Mix eight fluid ounces of solution of ammonia with one pint of distilled water; to this gradually add the solution of persulphate of iron previously diluted with about a pint of distilled water; stir the whole thoroughly, taking care that ammonia is, even finally, in slight excess, as indicated by the odour of the mixture. Let the whole stand for two hours, stirring occasionally; then put it on a calico filter, and, when the liquid has drained away, wash the precipitated ferric hydrate with distilled water until the liquid which passes through the filter ceases to give a precipitate with solution of chloride of barium. Let the ferric hydrate drain; squeeze it to remove superfluous moisture; dissolve it in the glacial acetic acid; and make the volume up to ten fluid ounces with distilled water. Allow any insoluble matter to subside, and pour off the clear solution.

Characters and Tests.—A deep-red fluid with a sour styptic taste and acetous odour, miscible with water or rectified spirit in all proportions. Diluted with water it yields a blue precipitate with ferrocyanide, but not with ferricyanide of potassium. Specific gravity 1·127. A fluid drachm, diluted with two fluid ounces of water, gives with excess of ammonia a reddish-brown precipitate which when washed and ignited weighs 5·7 grains.

Dose.—1 to 8 minims.

Preparations.

Liquor Ferri Acetatis | Tinctura Ferri Acetatis

LIQUOR FERRI DIALYSATUS.
Solution of Dialysed Iron.

This solution of dialysed iron, so called, is a solution of highly basic ferric oxychloride, or chloroxide of iron, from which most of the acidulous matter has been removed by dialysis.

Take of

Strong Solution of Perchloride of Iron .	7 fluid ounces
Solution of Ammonia Distilled Water } of each . .	a sufficiency

Mix six ounces of the solution of perchloride of iron with two pints of distilled water, and stir into the mixture sufficient diluted solution of ammonia to impart, after thorough agitation, a distinct ammoniacal odour. Filter through calico, wash the precipitated ferric hydrate with distilled water, and then squeeze it to remove superfluous moisture. Add the precipitate to the remainder of the solution of perchloride of iron, stir thoroughly, warm gently, and when complete or nearly complete solution is obtained filter if necessary and place the liquid in a covered dialyser; then subject it to a stream of water in the usual manner until the solution on the dialyser is almost tasteless. The resulting solution should measure twenty-eight fluid ounces.

N.B. Order of mixing to ppt the hydrate.

Use a bone knife

Characters and Tests.—A clear dark reddish-brown liquid, free from any marked ferruginous taste. Neutral to test-papers. Specific gravity about 1·047. The solution gives no precipitate with ferrocyanide of potassium or with nitrate of silver, but after being heated with hydrochloric acid it yields with ferrocyanide of potassium a blue precipitate. 100 grains by weight affords a precipitate with a solution of ammonia, which, washed, dried, and ignited, weighs five grains.

Dose.—10 to 30 minims.

LIQUOR FERRI PERCHLORIDI.

Solution of Perchloride of Iron.

12.8 % Fe_2Cl_6

Synonym.—Solution of Ferric Chloride.

The same strength as Tincture of Perchloride of Iron.

Take of

Strong Solution of Perchloride of Iron	5 fluid ounces
Distilled Water, sufficient to produce, after admixture, ...	20 fluid ounces

Specific gravity 1·11.

Dose.—10 to 30 minims.

LIQUOR FERRI PERCHLORIDI FORTIOR.

If the HNO_3 be poured on to the Fe solution there would be an inconveniently violent frothing.

Strong Solution of Perchloride of Iron.

Take of

Iron Wire	4 ounces
Hydrochloric Acid	20½ fluid ounces
Nitric Acid	1½ fluid ounce
Distilled Water	a sufficiency

Place the iron wire in a flask; add a mixture of twelve and a half fluid ounces of hydrochloric acid and seven of water; expose the whole to a (1)moderate temperature until effervescence(2) ceases; heat to boiling; filter from undissolved iron, rinsing the flask and contents with a little water and pouring this over the filter; add to the filtrate seven fluid ounces of hydrochloric acid; mix, and pour the solution in a slow continuous stream into a fluid ounce and a half of nitric acid, evolution of red fumes being promoted if necessary by a slight application of heat. Evaporate the product until no more nitrous fumes escape and a precipitate begins to form; then add one fluid ounce of hydrochloric acid and sufficient water to produce seventeen and a half fluid ounces of the solution.

(1) If too high a temp be used the acid will be driven off + less iron will be dissolved.

A drop or 2 of HNO_3 to complete the reaction should be added)

The disagreeable odour of the gas evolved by the HCl is due to the formation of a hydrocarbon.

The insoluble residue is largely carbon.

Characters and Tests.—An orange-brown solution with a strong styptic taste, miscible with water and rectified spirit in all proportions. Diluted with water it is precipitated white by nitrate of silver, and blue by ferrocyanide of potassium, but not at all by ferricyanide of potassium. Specific gravity about 1·42. A fluid drachm of it diluted with two fluid ounces of water gives, upon the addition of an excess of solution of ammonia, a reddish-brown precipitate, which, when well washed and incinerated, weighs between fifteen and sixteen grains. A piece of copper boiled for a few minutes in 50 or 100 grains of this solution, diluted with water, then rinsed in water, dried, and heated in a dry test-tube, (1)yields no white crystalline

(1) absence of As.

$$6\,FeCl_2 + 2HNO_3 + 6HCl = 3\,Fe_2Cl_6 + 2NO + 4H_2O.$$

sublimate. Two ounces of iron are contained in ten fluid ounces of the solution.

Preparations for which Strong Solution of Perchloride of Iron is used.

Liquor Ferri Dialysatus	
,, ,, Perchloridi	1 volume in 4
Tinctura Ferri Perchloridi	1 volume in 4

LIQUOR FERRI PERNITRATIS.

Solution of Pernitrate of Iron.

$13 \cdot 1 \%\ Fe_2(NO_3)_6$.

Take of

Fine Iron Wire, free from rust	1 ounce
Nitric Acid	4½ fluid ounces
Distilled Water	a sufficiency

Dilute the nitric acid with sixteen ounces of the water, introduce the iron wire into the mixture, and leave them in contact until the metal is dissolved, taking care to moderate the action, should it become too violent, by the addition of a little more distilled water. Filter the solution, and add to it as much distilled water as will make its bulk one pint and a half.

If the temp gets too high HNO_3 is decomposed + lost. N_2O_3 + N_2O_4 are liberated + the resulting liquor is of a dark colour.

Characters and Tests.—A clear solution of a reddish-brown colour, slightly acid and astringent to the taste; gives a blue precipitate with the ferrocyanide of potassium. When to a little of it placed in a test-tube half its volume of pure sulphuric acid is added, and then a solution of sulphate of iron is poured on, the whole assumes a dark-brown colour. Specific gravity 1·107. One fluid drachm treated with an excess of solution of ammonia gives a precipitate which, when washed, dried, and incinerated, weighs 2·6 grains. It gives no precipitate with ferricyanide of potassium.

Dose.—10 to 40 minims.

$Fe_2 + 8\,HNO_3 = Fe_2(NO_3)_6 + 4\,H_2O + 2\,NO$

$6 FeSO_4 + 2 HNO_3 + 3 H_2SO_4 = 3 Fe_2(SO_4)_3 + 4 H_2O + 2 NO.$

By adding K_2SO_4 or $(NH_4)_2SO_4$ to this sol: iron alum is obtained

LIQUOR FERRI PERSULPHATIS.

Solution of Persulphate of Iron.

Synonym.—Solution of Ferric Sulphate.

Take of

Sulphate of Iron	. . .	8 ounces
Sulphuric Acid Nitric Acid	of each . .	6 fluid drachms
Distilled Water	. . . .	12 fluid ounces, or a sufficiency

By adding the acid to the water the dissolved O is expelled + the possibility of oxidation of the $FeSO_4$ is reduced to a minimum.

Add the sulphuric acid to ten ounces of the water, and dissolve the sulphate of iron in the mixture with the aid of heat. Mix the nitric acid with the remaining two ounces of the water, and add to this diluted acid, warmed, the solution of sulphate of iron. Concentrate by boiling, until, by the sudden disengagement of ruddy vapours, the liquid ceases to be black and acquires a red colour. A drop of the solution is now to be tested with ferricyanide of potassium, and if a blue precipitate forms, a few additional drops of nitric acid should be added, and the boiling renewed, in order that the whole of the sulphate may be converted into persulphate of iron. When the solution is cold, make the quantity eleven fluid ounces by the addition, if necessary, of distilled water.

Characters and Tests.—A dense solution of a dark-red colour, inodorous and very astringent, miscible in all proportions with alcohol and water. Diluted with ten volumes of water, it gives a white precipitate with chloride of barium, and a blue precipitate with ferrocyanide, but not with ferricyanide, of potassium. Specific gravity 1·441. One fluid drachm diluted with two ounces of distilled water gives, upon the addition of an excess of solution of ammonia, a precipitate which, when well washed and incinerated, weighs 11·44 grains.

Preparations for which Solution of Persulphate of Iron is used.

Ferri et Ammonii Citras
" et Quininæ Citras
Ferri Peroxidum Hydratum
Ferrum Tartaratum
Liquor Ferri Acetatis Fortior

LIQUOR GUTTA PERCHA.

Solution of Gutta Percha.

Take of

Gutta Percha, in thin slices . .	1 ounce
Chloroform	8 fluid ounces
Carbonate of Lead, in fine powder .	1 ounce Carries down minute impurities.

Add the gutta percha to six fluid ounces of the chloroform in a stoppered bottle, and shake them together frequently until solution has been effected. Then add the carbonate of lead previously mixed with the remainder of the chloroform, and having several times shaken the whole together, set the mixture aside, and let it remain at rest until the insoluble matter has subsided. Lastly, decant the clear liquid, and keep it in a well-stoppered bottle.

Preparation for which this solution is used.

Charta Sinapis

LIQUOR HYDRARGYRI NITRATIS ACIDUS.

Acid Solution of Nitrate of Mercury.

54% $Hg(NO_3)_2$.

Synonyms.—Acid Solution of Mercuric Nitrate; Acid Solution of Pernitrate of Mercury.

Take of

Mercury	4 ounces
Nitric Acid	5 fluid ounces
Distilled Water	1½ fluid ounce

Mix the nitric acid with the water in a flask, and dissolve the mercury in the mixture without the application of heat. Boil gently for fifteen minutes, cool, and preserve the solution, which should weigh about twelve ounces, in a stoppered bottle away from the light. $3Hg + 8HNO_3 = 3Hg(NO_3)_2 + 4H_2O + 2NO$.

Characters and Tests.—A colourless and strongly acid solution, which gives a yellow precipitate with solution of potash added in excess. If a crystal of sulphate of iron be dropped into it, in a little time the salt of iron, and the liquid in its vicinity, acquire a dark colour. Specific gravity about 2·0. "Does not give any precipitate when a little of it is dropped "into hydrochloric acid diluted with twice its volume of water.

Absence of mercurous nitrate.

LIQUOR HYDRARGYRI PERCHLORIDI.

Solution of Perchloride of Mercury.

A sol: of pure $HgCl_2$ deposits oxychloride on keeping. The addition of NH_4Cl forms a double chloride.

Dispensed c̄ tap water an insoluble mercury salt is thrown down.

Synonym.—Liquor Hydrargyri Bichloridi; Solution of Mercuric Chloride.

Take of

Perchloride of Mercury Chloride of Ammonium	of each	10 grains . or . .	1 part
Distilled Water		1 pint . . . ,, . .	875 fl. parts

Dissolve.

Dose.—$\frac{1}{2}$ fluid drachm to 2 fluid drachms.

Liq Potass gives $NH_2HgCl \cdot NH_4Cl$. "Fusible white ppt."

LIQUOR IODI.

Solution of Iodine.[1]

Take of

Iodine . . .	22 grains . . . . or . .	10 parts
Iodide of Potassium	33 grains . . . . ,, . .	15 parts
Distilled Water sufficient to produce	1 fluid ounce . ,, . .	200 fluid parts

Dissolve.

LIQUOR LITHIÆ EFFERVESCENS.

Effervescing Solution of Lithia.

Synonyms.—Aqua Lithiæ Effervescens; Lithia Water.

Take of

Carbonate of Lithium	10 grains
Water	1 pint

Mix in a suitable apparatus, and force into it as much pure washed carbonic acid gas, obtained by the action of sulphuric acid on chalk, as can be introduced with a pressure of about four atmospheres. Keep the solution in bottles securely closed, to prevent the escape of the compressed gas.

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[1] The strength is 5 in 100. It was 5 in 109 in B. P. 1867.

Characters and Tests.—Effervesces strongly when the containing vessel is opened, carbonic acid gas escaping. The liquid is clear and sparkling, and has an agreeable acidulous taste. Half a pint of it, evaporated to dryness, yields five grains of a white solid residue, answering to the tests for carbonate of lithium.

Dose.—5 to 10 fluid ounces.

LIQUOR MAGNESII CARBONATIS.
Solution of Carbonate of Magnesium.

Synonym.—Fluid Magnesia.

Take of

Sulphate of Magnesium . . .	2 ounces
Carbonate of Sodium	2½ ounces
Distilled Water	a sufficiency

Dissolve the two salts separately each in half a pint of water. Heat the solution of sulphate of magnesium to the boiling point, then add to it the solution of carbonate of sodium, and boil them together until carbonic acid ceases to be evolved. Collect the precipitated carbonate of magnesium on a calico filter, and wash it with distilled water until what passes ceases to give a precipitate with chloride of barium. Mix the washed precipitate with a pint of distilled water, and, putting them into a suitable apparatus, force into it pure washed carbonic acid gas obtained by the action of sulphuric acid on chalk. Let the mixture remain in contact with excess of carbonic acid, retained there under pressure of about three atmospheres for twenty-four hours or longer, then filter the liquid to remove any undissolved carbonate of magnesium, and again pass carbonic acid gas into the filtered solution. Finally, keep the solution in a bottle securely closed, to prevent the escape of carbonic acid.

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d be
n.

This solution contains nearly ten grains of the official $(MgCO_3)_3 Mg(OH)_2 4H_2O.$ carbonate of magnesium in a fluid ounce, or about 2 per cent.

Characters and Tests.—Effervesces slightly, or not at all,

$3MgCO_3 \cdot Mg(OH)_2 + 5CO_2 + 3H_2O = 4(MgCO_3 \cdot H_2CO_3)$

Exposed to the air or kept any length of time deposits $MgCO_3 \cdot 5H_2O$.

when the containing vessel is first opened. The liquid is clear and free from any bitter taste. A fluid ounce of it, evaporated to dryness, yields a white solid residue, which after being calcined weighs about four grains. This residue is insoluble in water and answers to the tests for magnesia.

Dose.—1 to 2 fluid ounces.

LIQUOR MAGNESII CITRATIS.

Solution of Citrate of Magnesium.

Synonym.—Effervescing Solution of Citrates of Magnesium and Potassium.

Take of

10 grs Mag Carb per fl oz = 3.57. Mag Cit.

Carbonate of Magnesium . . .	100 grains
Citric Acid	200 grains
Syrup of Lemons	½ fluid ounce
Bicarbonate of Potassium, in crystals .	40 grains
Water	a sufficiency

Dissolve the citric acid in two ounces of the water, and having added the carbonate of magnesium, stir until it is dissolved. Filter the solution into a strong half-pint bottle, add the syrup and sufficient water to nearly fill the bottle, then introduce the bicarbonate of potassium, and immediately close the bottle with a cork which should be secured with string or wire. Afterwards shake the bottle until the bicarbonate of potassium has dissolved. $3KHCO_3 + H_3C_6H_5O_7 = K_3C_6H_5O_7 + 3CO_2 + 3H_2O$.

Deposits $Mg_3C_6H_5O_7 \cdot 14H_2O$

Dose.—5 to 10 fluid ounces.

$$3[3MgCO_3 \cdot Mg(OH)_2 \cdot 4H_2O] + 8H_3C_6H_5O_7 \cdot H_2O = 4Mg_3(C_6H_5O_7)_2 + 9CO_2 + 27H_2$$

LIQUOR MORPHINÆ ACETATIS.

Solution of Acetate of Morphine.[1]

Take of

Deposits a fungoid growth.

Acetate of Morphine	9 grains	or . .	1 part
Diluted Acetic Acid .	18 minims	,, . .	2 fluid parts
Rectified Spirit .	½ fluid ounce . . .	,, . .	24 fluid parts
Distilled Water .	1½ fluid ounces . .	,, . .	73 fluid parts

Mix the acid, the spirit, and the water, and dissolve the acetate of morphine in the mixture.

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[1] The strength is about 1 in 100. It was about 1 in 109 in B. P. 1867.

The acids in this + in Liq. M. Hydrochlor. are added to prevent deposition of basic salts. Sulph. Morphine does not deposit a basic salt hence no acid is used.

Avoid using more heat than is absolutely necessary in dissolving Morphine salts; at a temp: about 40°C their solutions are apt to turn yellowish or even brown. With care a beautiful solution may be made.

The acetate of morphine employed should be recently prepared, and of such quality that twenty grains will form a clear solution with one fluid drachm of water by the help of not more than one grain of acetic acid.

Solution of Acetate of Morphine may also be prepared by diluting ninety minims of Injectio Morphinæ Hypodermica with sufficient of a mixture of one volume of rectified spirit and two volumes of water to form two fluid ounces of the solution.″

Dose.—10 to 60 minims.

LIQUOR MORPHINÆ BIMECONATIS.

Solution of Bimeconate of Morphine.

Take of

Hydrochlorate of Morphine	9 grains
Solution of Ammonia	a sufficiency
Meconic Acid	6 grains
Rectified Spirit	½ fluid ounce
Distilled Water	a sufficiency

Use same precautions as in Liq. Inj. M. Hypoderm.

tube.

Dissolve the hydrochlorate of morphine in two or three drachms of distilled water, aiding solution by warmth; then add solution of ammonia until morphine ceases to be precipitated; cool; filter; wash the precipitate with distilled water until the washings cease to give a precipitate with nitrate of silver; drain; mix the precipitate with sufficient water to produce an ounce and a half; add the rectified spirit and the meconic acid; dissolve. Filter thro' white paper free from Fe (Wash the filter paper with HCl + water).

Do not use a steel knife.

Characters and Tests.—A colourless or nearly colourless liquid. Solution of potash produces a white precipitate soluble in excess. Nitric acid gives an orange-red coloration, and neutral solution of perchloride of iron a blood-red coloration which is not changed by the addition of diluted hydrochloric acid, but is discharged by the strong acid. One fluid ounce of this solution contains about 5½ grains, equal to about 1¼ per cent. of bimeconate of morphine $(C_{17}H_{19}NO_3,C_7H_4O_7)$. The solution, as regards meconate of morphine, is about the same strength as tincture of opium.

Dose.—5 to 40 minims.

LIQUOR MORPHINÆ HYDROCHLORATIS.

Solution of Hydrochlorate of Morphine.[1]

Take of

Hydrochlorate of Morphine .	9 grains	or . . 1 part
Diluted Hydrochloric Acid .	18 minims	,, . . 2 fluid parts
Rectified Spirit .	½ fluid ounce ...	,, . . 24 fluid parts
Distilled Water .	1½ fluid ounce . .	,, . . 73 fluid parts

Mix the hydrochloric acid, the spirit, and the water, and dissolve the hydrochlorate of morphine in the mixture.

Dose.—10 to 60 minims.

LIQUOR PLUMBI SUBACETATIS.

Goulard's Extract

Solution of Subacetate of Lead.

Subacetate of Lead, $Pb_2O(C_2H_3O_2)_2$, dissolved in water.

First thoroughly mix the 2 powders Stir in the water & whilst boiling STIR CONSTANTLY.

Take of

Acetate of Lead . . .	5 ounces
Oxide of Lead, in powder .	3½ ounces
Distilled Water . . .	1 pint, or a sufficiency

In making a smaller quant: add a little water occasionally during evap:

Boil the acetate of lead and the oxide of lead in the water for half an hour, constantly stirring; then filter, and when the liquid is cold add to it more distilled water, until the product measures twenty fluid ounces. Keep the clear solution in stoppered bottles.

Characters and Tests.—A dense clear colourless liquid, with alkaline reaction and sweet astringent taste, becoming turbid by exposure to the air; and forming with mucilage of gum acacia an opaque white jelly. Sulphuric acid in excess gives a white precipitate, acetic acid being set free. Specific gravity 1·275. 284·5 grains by weight requires for perfect precipitation 500 grain-measures of the volumetric solution of oxalic acid, corresponding to 24 per cent. of the subacetate of lead, $Pb_2O(C_2H_3O_2)_2$.

Preparation.—Liquor Plumbi Subacetatis Dilutus.

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[1] The strength is about 1 in 100. It was about 1 in 109 in B. P. 1867.

$$PbO + Pb\,2C_2H_3O_2 = Pb_2O(C_2H_3O_2)_2$$

$$\text{or } 3PbO + 3Pb(C_2H_3O_2)_2 = \underbrace{Pb_3O(C_2H_3O_2)_4 + Pb_3O_2(C_2H_3O_2)_2}$$

LIQUOR PLUMBI SUBACETATIS DILUTUS. Goulard's Water.

Diluted Solution of Subacetatate of Lead.

Distilled water should be recently boiled, to this add S.V.R. mix + allow to become clear. Then add sol: Subacet: Pb.

Take of

Solution of Subacetate of Lead . Rectified Spirit .	of each 2 fluid drachms .	or . 1 fluid part
Distilled Water .	19½ fluid ounces	,, . 78 fluid parts

Mix, and filter through paper. Keep the clear solution in a stoppered bottle.

LIQUOR POTASSÆ.

Solution of Potash.

It may be prepared in the following manner:—

Take of

Carbonate of Potassium . . .	1 pound
Slaked Lime, washed	12 ounces
Distilled Water	1 gallon

Dissolve the carbonate of potassium in the water; and, having heated the solution to the boiling point in a clean iron vessel, gradually mix with it the washed slaked lime (obtained from about thirteen ounces of slaked lime washed with distilled water until a little of the washings, acidified with nitric acid, gives no cloudiness with nitrate of silver), and continue the ebullition for ten minutes with constant stirring. Then remove the vessel from the fire; and when by the subsidence of the insoluble matter the supernatant liquor has become perfectly clear, transfer it by means of a siphon to a green-glass bottle furnished with an air-tight stopper, and add distilled water, if necessary, to make it correspond with the tests of specific gravity and neutralising power.

Tests.—Specific gravity 1·058. 462·9 grains by weight (1 fluid ounce) requires for neutralisation 482 grain-measures of

a conc^d: sol: KOH will decompose $CaCO_3$ forming K_2CO_3, CaO, + H_2O.

the volumetric solution of oxalic acid, corresponding to 5·84 per cent. by weight of hydrate of potassium, KHO. It does not effervesce when added to an excess of diluted hydrochloric acid. Mixed with an equal volume of distilled water, it gives no precipitate with solution of lime or oxalate of ammonium. When it is treated with an excess of diluted nitric acid, and evaporated to dryness, the residue forms with water a nearly clear solution, which may be slightly precipitated by chloride of barium and nitrate of silver, but is unaffected, or but very slightly affected, by ammonia.(') Acidulated by hydrochloric acid, the solution is unaffected by sulphuretted hydrogen. One fluid ounce contains 27 grains of hydrate of potassium.

absence of b. alumina.

Dose.—15 to 60 minims.

Destroys animal substances, if reqd. to be filtered this is best done with asbestos.

LIQUOR POTASSÆ EFFERVESCENS.

Effervescing Solution of Potash.

Synonyms.—Aqua Potassæ Effervescens; Potash Water.

Take of

Bicarbonate of Potassium	30 grains
Water	1 pint

Dissolve the bicarbonate of potassium in the water and filter the solution; then force into it as much pure washed carbonic acid gas, obtained by the action of sulphuric acid on chalk, as can be introduced with a pressure of about four atmospheres. Keep the solution in bottles securely closed, to prevent the escape of the compressed gas.

·Marble is better.

Characters and Tests.—Effervesces strongly when the containing vessel is opened, carbonic acid gas escaping. The liquid is clear and sparkling, and has an agreeable acidulous taste. Ten fluid ounces, after being boiled for five minutes, requires for neutralisation 150 grain-measures of the volumetric solution of oxalic acid. Five fluid ounces, evaporated to one-fifth, and twelve grains of tartaric acid added, yields a crystalline precipitate, which when dried weighs not less than twelve grains.

Distinction from "Soda Water."

1 C.C. $\frac{N}{2}$ $H_2C_2O_4$ = ·1 grm $KHCO_3$.

LIQUOR POTASSII PERMANGANATIS.

Solution of Permanganate of Potassium.[1]

Take of

Permanganate of Potassium	88 grains . .	or . .	1 part
Distilled Water . . .	1 pint	,, . .	99 fl. parts

Dissolve. Decomposes organic matter (corks &c)

Dose.—2 to 4 fluid drachms.

LIQUOR SODÆ.

Solution of Soda.

It may be prepared in the following manner:—

Take of

Carbonate of Sodium	28 ounces
Slaked Lime, washed	12 ounces
Distilled Water	1 gallon

Dissolve the carbonate of sodium in the water; and, having heated the solution to the boiling point in a clean iron vessel, gradually mix with it the washed slaked lime (obtained from about 13 ounces of slaked lime washed with distilled water until a little of the washings, acidified with nitric acid, gives no cloudiness with nitrate of silver), and continue the ebullition for ten minutes with constant stirring. Then remove the vessel from the fire; and when, by the subsidence of the insoluble matter, the supernatant liquor has become perfectly clear, transfer it by means of a siphon to a green-glass bottle furnished with an air-tight stopper, and add distilled water, if necessary, to make it correspond with the tests of specific gravity and neutralising power.

Tests.—Specific gravity 1·047. 458 grains by weight (1 fluid ounce) requires for neutralisation 470 grain-measures of the volumetric solution of oxalic acid, corresponding to 4·1 per cent. by weight of hydrate of sodium, NaHO. It does not effervesce when added to an excess of diluted hydrochloric acid. Mixed with an equal volume of distilled water, it gives no precipitate with solution of lime or oxalate of ammonium. When it is treated with an excess of diluted nitric acid and evaporated to dryness, the residue forms with water a clear solution which is only slightly precipitated by chloride of barium or by nitrate of silver, and not at all by ammonia. Acidified by hydrochloric acid, the solution is unaffected by sulphuretted hydrogen. One fluid ounce contains 18·8 grains of hydrate of sodium.

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[1] The strength is about 1 in 100. It was 1 in 109 in B. P. 1867.

Absence of alumina

LIQUOR SODÆ CHLORINATÆ.

Solution of Chlorinated Soda.

Take of

Chlorinated Lime	16 ounces
Carbonate of Sodium	24 ounces
Distilled Water	1 gallon

Dissolve the carbonate of sodium in two pints of the distilled water; thoroughly triturate the chlorinated lime with six pints of the water, and filter; well mix the solutions; again filter. Keep the solution in a stoppered bottle in a cool and dark place.

Characters and Tests.—A colourless alkaline liquid, with astringent taste and feeble odour of chlorine. It decolorises sulphate of indigo. It is decomposed by hydrochloric acid, evolving chlorine and little or no carbonic acid gas. Specific gravity 1·054. Seventy grains by weight, added to a solution of twenty grains of iodide of potassium in four fluid ounces of water and acidulated with two fluid drachms of hydrochloric acid, requires, for the discharge of the brown colour which the mixture assumes, at least 500 grain-measures of the volumetric solution of hyposulphite of sodium, corresponding to about 2½ per cent. of available chlorine. The solution yields only a slight precipitate with oxalate of ammonium.

Dose.—10 to 20 minims.

Preparation.—Cataplasma Sodæ Chlorinatæ.

$CaCl_2O_2 \cdot CaCl + 2Na_2CO_3 = 2(NaClO \cdot NaCl) + 2CaCO_3$.

Vol: Est: Take 5 or 10 c.c

1 c.c. $\frac{N}{10}$ Thiosulph = ·00355 grm Cl.

LIQUOR SODÆ EFFERVESCENS.

Effervescing Solution of Soda.

Synonyms.—Aqua Sodæ Effervescens; Soda Water.

Take of

Bicarbonate of Sodium	30 grains
Water	1 pint

Dissolve the bicarbonate of sodium in the water, and filter the solution; then force into it as much pure washed carbonic acid gas, obtained by the action of sulphuric acid on chalk, as can be introduced with a pressure of about four atmospheres. Keep the solution in bottles securely closed, to prevent the escape of the compressed gas.

Characters and Tests.—Effervesces strongly when the containing vessel is opened, carbonic acid gas escaping. The liquid is clear and sparkling, and has an agreeable acidulous taste. Ten fluid ounces, after being boiled for five minutes, requires for neutralisation 178 grain-measures of the volumetric solution of oxalic acid. 1 c.c. $\frac{N}{2}$ $H_2C_2O_4$ req ·084 grm $NaHCO_3$.

LIQUOR SODII ARSENIATIS.

Solution of Arseniate of Sodium.[1]

The arseniate is rendered anhydrous as the water of crystallization varies in different samples.

Take of

Arseniate of Sodium, rendered anhydrous by a temperature not exceeding 300° F. (148°·9 C.) .	9 grains	or .	1 part
Distilled Water . .	2 fluid ounces .	,, .	99 fl. parts

Dissolve.

Dose.—5 to 10 minims.

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[1] The strength is about 1 in 100. It was 1 in 109 in B. P. 1867.

At a higher temp than 300° F pyroarseniate would be formed & this would render the solution stronger.

LIQUOR SODII ETHYLATIS.

Solution of Ethylate of Sodium.

Take of

Avoid using the darker portions

Metallic Sodium, free from oxide . .	22 grains.	or . .	1 part
Ethylic Alcohol .	1 fluid ounce . .	,, . .	20 fluid parts

Net product ℥iv

Dissolve the sodium in the ethylic alcohol contained in a flask, the latter being kept cool in a stream of cold water. The solution should be recently prepared. Absorbs CO_2 + deposits Na_2C

Characters and Tests.—A colourless liquid of syrupy consistence, becoming brown by keeping. Specific gravity 0·867. When heated it boils and gives off alcoholic vapours, leaving a white salt which, on being strongly heated, chars. If the white salt be mixed with water and heated, it yields alcohol, and the solution, on evaporation, leaves a white residue consisting almost wholly of caustic soda. Solution of ethylate of sodium contains 19 per cent. of the solid salt, NaC_2H_5O.

Treated with iodine solution forms CHI_3

LIQUOR STRYCHNINÆ HYDROCHLORATIS.

Solution of Hydrochlorate of Strychnine.[1]

Synonym.—Liquor Strychniæ.

Crush the cryst: with a palette knife. Dissolve in a test tube with only a gentle heat. N.B. the B.P. does NOT direct this prep: to be made up to f℥iv

Take of

Strychnine, in crystals	9 grains	or . .	1 part
Diluted Hydrochloric Acid . . .	14 minims . . .	,, . .	2 fluid parts
Rectified Spirit .	½ fluid ounce . .	,, . .	24 fluid parts
Distilled Water .	1½ fluid ounce .	,, . .	73 fluid parts

Mix the hydrochloric acid with four drachms of the water, and dissolve the strychnine in the mixture by the aid of heat. Then add the spirit and the remainder of the water. The solution should not be kept in a cold place.

Dose.—5 to 10 minims.

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[1] The strength is about 1 in 100. It was about 1 in 109 in B. P. 1867.

Liq: Strych: is not compatible with Liq: arsenicalis the alkalinity of the latter pptg strychnine. This is not the case with Liq: Arsen: Hy

$2 FeCl_2 + Cl_2 = Fe_2Cl_6$

$Fe_2Cl_6 + 3 ZnCO_3 + 3 H_2O = 3 ZnCl_2 + Fe_2(OH)_6 + 3 CO_2$

$PbCl_2 + Cl_2 + 2ZnCO_3 = 2 ZnCl_2 + PbO_2 + 2CO_2$.

LIQUOR ZINCI CHLORIDI.

Solution of Chloride of Zinc.

366 grains $ZnCl_2$ in a fluid ounce.

Take of

Granulated Zinc	1 pound
Hydrochloric Acid	44 fluid ounces
Solution of Chlorine	a sufficiency
Carbonate of Zinc	½ ounce, or a sufficiency
Distilled Water	1 pint

Mix the hydrochloric acid and water in a porcelain dish, add the zinc, and apply heat gently to promote the action until gas is no longer evolved. Boil for half an hour, supplying the water lost by evaporation, and allow the product to cool.

Test a few drops of the resulting liquid for iron or lead by adding excess of ammonia and then sulphydrate of ammonium, when a black precipitate is produced if either is present. In the latter case, filter the remainder of the product into a bottle, and add solution of chlorine by degrees, with frequent agitation, until the fluid acquires a permanent odour of chlorine. Add the carbonate of zinc, in small quantities at a time, and with renewed agitation, until a brown sediment appears and the whole of the iron or lead is thus precipitated.

Filter the liquid into a porcelain basin, and evaporate until it is reduced to the bulk of two pints.

If no iron or lead be present, filter and evaporate to two pints at once. Any As in the Zn is liberated as AsH_3

Characters.—A colourless fluid of astringent and sweetish taste. Specific gravity 1·460. It should respond to the tests described under 'Zinci Chloridum.'

LITHII CARBONAS.

Carbonate of Lithium.

L_2CO_3.

Characters and Tests.—In white powder or in minute crystalline grains, alkaline in reaction, soluble in 150 parts of cold water, insoluble in alcohol. It dissolves with efferves-

rep: A concentrated sol: of LiCl is poured into a solution of
mmon: Carb: in aqueous ammonia + the mixture heated as
ng as the ppt: increases in bulk.

Lepidolite (a silicate of KF + LF.) is first dissolved in HCl, the solution treated with H_2S. This ppts As + Cu. Filter peroxide with Cl. Neutralize + add Fe_2Cl_6. This ppts the H_3PO_4. Filter + add BaS This ppts Mn Filter + add H_2SO_4 This ppts excess of Ba. Concentrate + add oxalic a this ppts $L_2C_2O_4$ On ignition the crude carbonate is left. (Ignite at a l red heat as L are volatile)

cence in hydrochloric acid; and the solution evaporated to dryness leaves a residue of chloride of lithium, which communicates a red colour to the flame of a spirit lamp, and redissolved in water yields a precipitate on boiling with phosphate of sodium. Ten grains of the salt neutralised with sulphuric acid and afterwards heated to redness leaves 14·86 grains of dry sulphate of lithium, which, when redissolved in distilled water, yields no precipitate with oxalate of ammonium or solution of lime.

Absence of Calcium salts + alumina. =

Dose.—3 to 6 grains.

Preparations for which Carbonate of Lithium is used.

Liquor Lithiæ Effervescens | Lithii Citras

LITHII CITRAS.

Citrate of Lithium.

$L_3C_6H_5O_7,4H_2O$.

Synonyms.—Lithiæ Citras; Citrate of Lithia.

Take of

Carbonate of Lithium	50 grains
Citric Acid, in crystals	90 grains
Warm Distilled Water	1 fluid ounce

Dissolve the citric acid in the water, and add the carbonate of lithium in successive portions, applying heat until effervescence ceases, and a perfect solution is obtained. Evaporate by a steam or sand bath until the product has a specific gravity of about 1·230, and set aside for crystals to form. Dry the crystals and preserve them in a stoppered bottle.

Characters and Tests.—A white crystalline salt, soluble in water without leaving any residue. Heated to redness it blackens, evolving inflammable gases; and the residue, neutralised by hydrochloric acid, yields with rectified spirit a solution which burns with a crimson flame. Twenty grains of the salt dried at 212° F. (100° C.) lose about 3·8 grains, at 240° F. (115°·5 C.) an additional 1·3 grain, and when burned at a low red heat with free access of air, leave 7·8 grains of white residue.

Dose.—5 to 10 grains.

$3L_2CO_3 + 2H_3C_6H_5O_7 + 5H_2O = 2(L_3C_6H_5O_7 \cdot 4H_2O) + 3CO_2$.

LOBELIA.

Lobelia. N.O. Campanulaceæ.

The dried flowering herb of Lobelia inflata, *Linn.*; S.O. Lobeliæ. *Bentl. and Trim. Med. Pl.* vol. iii. plate 162. N. America.

Characters.—Usually in compressed oblong rectangular packages, weighing from half a pound to a pound each, and wrapped in sealed and labelled papers. The separate pieces are of varying lengths, yellowish-green, angular, and bearing sessile or stalked hairy oval irregularly toothed leaves, together with some flowers and fruits. Odour somewhat irritating; taste at first mild, but, after chewing, burning and acrid.

Preparations.

Tinctura Lobeliæ . .	54½ grains to 1 fluid ounce
" " Ætherea .	54½ grains to 1 fluid ounce

P.C. "Lobeline", lobelacrin, lobelic acid resin, wax, vol: oil gum.

LOTIO HYDRARGYRI FLAVA.

a "Lotion" is a solution or mixture of active substances in water for external application.

Yellow Mercurial Lotion.

Take of

Perchloride of Mercury	18 grains	or . 1 part
Solution of Lime .	10 fluid ounces .	" . 243 fluid parts

Mix. $HgCl_2 + Ca2OH = CaCl_2 + HgO + H_2O$.

LOTIO HYDRARGYRI NIGRA.

Black Mercurial Lotion.

Take of

Subchloride of Mercury	30 grains	or . 1 part
Solution of Lime .	10 fluid ounces .	" . 146 fluid parts

Mix. $2HgCl + Ca2HO = CaCl_2 + Hg_2O + H_2O$.

LUPULINUM.

Lupulin.

Synonym.—Lupulinic Glands.

A glandular powder obtained from the dried strobiles of Humulus Lupulus, *Linn.* afford 8-12%.
Should be washed by decantation to remove sand & then dried.

Magnesium Ores. Dolomite double carbonate Mg + Ca
Magnesite — carbonate Brucite — hydrate Kieserite — sulpha
Talc steatite meerschaum are silicates.

Characters and Tests.—A granular bright brownish-yellow powder, which, under the microscope, is seen to consist of minute, somewhat globular-top-shaped, reticulated, translucent, shining glands. It burns readily, and has the agreeable aromatic odour and taste of hop. On incineration it should not yield more than about 15 per cent. of ash. Not more than about 30 or 40 per cent. should be insoluble in ether.

Dose.—2 to 5 grains.

P.C. An Essential oil identical with that yielded by the hop. wax, re
Lupamaric acid

LUPULUS.

Hop.

N.O. Cannabinaceæ. *Synonym.*—Humulus.

The dried strobiles of Humulus Lupulus, *Linn.*, from plants cultivated in England; *Bentl. and Trim. Med. Pl.* vol. iv. plate 230.

Characters.—More or less compressed and broken in commercial specimens. When entire, about one inch and a quarter long; oblong-ovoid or rounded in form, and consisting of a number of thin greenish-yellow or brownish membranous imbricated scales or bracts; each of which has at its base a small rounded achene sprinkled over with brownish-yellow glands (lupulin), the whole being attached to a hairy undulated axis. Odour agreeably aromatic; taste bitter, aromatic, and feebly astringent.

Preparations.

Extractum Lupuli	
Infusum Lupuli . .	½ ounce to 10 fluid ounces
Tinctura Lupuli . .	2½ ounces to 1 pint

P.C. Independent of constituents contained in glands, hop contains 5% tannin nearly 1% resin + alkaloid.

MAGNESIA LEVIS.

Light Magnesia.

Synonyms.—Light Calcined Magnesia; Oxide of Magnesium.

MgO.

Take of
Light Carbonate of Magnesium . . 4 ounces

$3MgCO_3 \cdot Mg2HO = 4MgO + H_2O + 3CO_2$.

Put it into a Cornish or Hessian crucible closed loosely by a lid, and expose it to a low red heat until a small quantity, taken from the centre of the crucible, cooled, moistened with water, and dropped into warm diluted sulphuric acid, causes no effervescence. Product 42 %.

Characters.—A bulky white powder differing from the following preparation only in its greater lightness, the volumes corresponding to the same weight being to each other in the ratio of three and a half to one.

Dose.—10 to 60 grains.

Preparation.—Pulvis Rhei Compositus, 2 parts in 3.

These preparations must be calcined in a furnace so arranged that a draught may be constantly passing over or thro' the substance so as to carry off the CO_2 formed, as even an intense heat has scarcely any effect on the carbonate in an atmosphere of CO_2. Especially is this the case with $CaCO_3$.

MAGNESIA PONDEROSA.

Heavy Magnesia.

Synonyms.—Heavy Calcined Magnesia; Oxide of Magnesium.

MgO.

Take of

Heavy Carbonate of Magnesium . . 4 ounces

Put it into a Cornish or Hessian crucible closed loosely by a lid, and expose it to a low red heat until a small quantity, taken from the centre of the crucible, cooled, moistened with water, and dropped into warm diluted sulphuric acid, causes no effervescence. Product 42 %.

Characters and Tests.—A white powder, insoluble in water, (Sol to extent of 1 in 55000) but readily dissolved by acids without effervescence. Its solution in hydrochloric acid, when neutralised by a mixed solution of ammonia and chloride of ammonium, gives a copious crystalline precipitate when phosphate of sodium is added. $MgNH_4PO_4$ Dissolved in nitric acid, and neutralised with a mixture of ammonia and chloride of ammonium, it does not give any precipitate with oxalate of ammonium or chloride of barium. Absence of lime + H_2SO_4.

Dose.—10 to 60 grains.

Preparation.—Pulvis Rhei Compositus, 2 parts in 3.

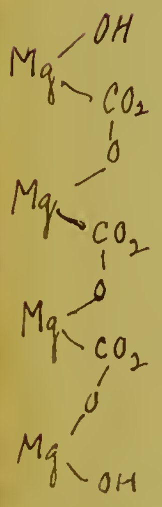
Preparations of Magnesium and its Compounds.

Enema Magnesii Sulphatis .	1 ounce Sulphate in 16 fl. ozs.
Liquor Magnesii Carbonatis .	10 grains Carbonate in 1 fl. oz.
,, ,, Citratis .	Half-pint made from 100 grains Carbonate
Magnesia Levis ; Magnesia Ponderosa	
Magnesii Carbonas Levis ; Magnesii Carbonas Ponderosa	
,, Sulphas	
Mistura Sennæ Composita .	1 ounce Sulphate in 5 fluid ounces
Pulvis Rhei Compositus .	2 parts Magnesia in 3
Trochisci Bismuthi . .	2½ grains Carbonate in each lozenge, nearly

MAGNESII CARBONAS LEVIS.

Light Carbonate of Magnesium.

Synonyms.—Magnesiæ Carbonas Levis; Light Carbonate of Magnesia.



$$(MgCO_3)_3,Mg(HO)_2,4H_2O.$$

Take of

Sulphate of Magnesium . . .	10 ounces
Carbonate of Sodium . . .	12 ounces
Distilled Water	a sufficiency

Dissolve the sulphate of magnesium and the carbonate of sodium each in half a gallon of the water, mix the two solutions cold, and boil the mixture in a porcelain dish for fifteen minutes. Transfer the precipitate to a calico filter, and pour upon it repeatedly boiling distilled water, until the washings cease to give a precipitate with chloride of barium. Lastly, dry by a temperature not exceeding 212° F. (100° C.)

Characters.—A very light powder, which, when examined under the microscope, is found to be partly amorphous with numerous slender prisms intermixed. The other characters and tests are the same as those of heavy carbonate of magnesium.

Dose.—10 to 60 grains.

Preparation in which Light Carbonate of Magnesium is used.

Vapor Olei Pini Sylvestris

$$4\,MgSO_4 + 4\,Na_2CO_3 + 5H_2O = (MgCO_3)_3\;Mg(OH)_2\cdot 4H_2O + 4\,Na_2SO_4 + CO_2.$$

MAGNESII CARBONAS PONDEROSA.

Heavy Carbonate of Magnesium.

Synonyms.—Magnesiæ Carbonas; Heavy Carbonate of Magnesia.

$(MgCO_3)_3,Mg(HO)_2,4H_2O$.

Take of

Sulphate of Magnesium . . .	10 ounces
Carbonate of Sodium . . .	12 ounces
Boiling Distilled Water . . .	a sufficiency

Dissolve the sulphate of magnesium and the carbonate of sodium each in a pint of the water, mix the two solutions, and evaporate the whole to perfect dryness by means of a sand-bath. Digest the residue for half an hour with two pints of the water, and having collected the insoluble matter on a calico filter, wash it repeatedly with distilled water, until the washings cease to give a precipitate with chloride of barium. Finally, dry the product at a temperature not exceeding 212° F. (100° C.)

Characters and Tests.—A white granular powder, that dissolves readily with effervescence in the diluted mineral acids, yielding solutions which, when first treated with chloride of ammonium, are not disturbed by the addition of an excess of solution of ammonia, but yield a copious crystalline precipitate upon the addition of phosphate of sodium. With excess of hydrochloric acid it forms a clear solution in which chloride of barium causes no precipitate. Another portion of the solution supersaturated with ammonia gives no immediate precipitate with oxalic acid, and none with sulphuretted hydrogen. Fifty grains calcined at a red heat are reduced to twenty-two.

e of
umina.

Absence of
$CaCO_3$; iron
lead etc.

Dose.—10 to 60 grains.

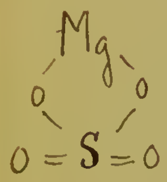
Preparations containing Carbonate of Magnesium.

Liquor Magnesii Carbonatis .	10 grains in 1 fluid ounce
Trochisci Bismuthi . .	2½ grains in each lozenge, nearly

Dolomite is calcined washed with water to remove the more soluble lime, + residue treated with dilute H_2SO_4.

MAGNESII SULPHAS.

Sulphate of Magnesium.



Synonyms.—Magnesiæ Sulphas; Sulphate of Magnesia; Epsom Salt.

$MgSO_4,7H_2O$.

Characters and Tests.—In minute colourless and transparent rhombic prisms, possessing a bitter taste. It readily dissolves in water, and the solution gives copious white precipitates with chloride of barium and with a mixed solution of ammonia chloride of ammonium and phosphate of sodium. Its aqueous solution at ordinary temperatures is not precipitated by oxalate of ammonium, nor should it give a brown precipitate with chlorinated lime or soda. The precipitate given by carbonate of sodium, when obtained from a boiling solution of one hundred grains of the salt, should, when well washed, dried, and heated to redness, weigh 16·26 grains.

Absence of $FeSO_4$

Dose.—60 grains to ½ ounce.

$MgCO_3 + H_2SO_4 + 6H_2O = MgSO_4 \cdot 7H_2O + CO_2$.

Preparations.

Enema Magnesii Sulphatis . 1 ounce in 16 fluid ounces
Mistura Sennæ Composita . 1 ounce in 5½ fluid ounces

Preparations for which Sulphate of Magnesium is used.

Magnesii Carbonas Levis | Magnesii Carbonas Ponderosa

MANGANESII OXIDUM NIGRUM.

Black Oxide of Manganese.

MnO_2.

Characters and Tests.—A heavy black powder, which dissolves almost entirely in hydrochloric acid with evolution of chlorine, and gives off oxygen when heated to redness.

on heating only. Used in producing chlorine and permanganate of potassium.

In cold $MnO_2 + 4HCl = MnCl_4 + 2H_2O$
on heating $MnCl_4 = MnCl_2 + Cl_2$.

MANNA.

Manna. N.O. Oleaceæ.

A concrete saccharine exudation obtained by making transverse incisions in the stems of cultivated trees of Fraxinus Ornus, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 170. Basin of the Mediterranean.

Characters and Tests.—In stalactitic pieces, varying in length and thickness, flat or concave on their inner surface; of a pale yellowish-brown colour, irregularly convex, and nearly white externally. This manna, which is known as flake manna, is crisp, brittle, porous, crystalline in structure, and readily soluble in about six parts of water. Odour faint, resembling honey; taste sweet and honey-like, combined with a slight acridity and bitterness. It consists principally of mannite, $C_6H_8(HO)_6$, together with common sugar and indefinite matter. The mannite, which forms from 60 to 80 per cent. of the manna, may be extracted by boiling with fifteen or sixteen parts of rectified spirit, from which it will afterwards separate on cooling in colourless, shining crystals; it requires five parts of cold water for its solution, and this does not undergo vinous fermentation in contact with yeast. Manna contains about ten per cent. of moisture. P.C. 90% Mannite in best vars. Glucose mucilage resin fraxin.

Dose.—60 grains to 1 ounce.

MARMOR ALBUM.

White Marble.

$CaCO_3$.

Hard white crystalline native carbonate of calcium, in masses.

Used in producing carbonic acid gas.

MASTICHE.

N.O. Anacardiaceæ.

Mastich.

A concrete resinous exudation obtained by making incisions in the bark of the stem and large branches of Pistacia Lentiscus, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 68. Mediterranean basin
Collected chiefly in the island of Scio.

Characters.—In rounded, irregular, oblong, or pear-shaped tears, of a pale yellow colour, and either opaque and dusty on their outer surface, or far more frequently having a glassy and transparent appearance; brittle, and breaking with a vitreous, conchoidal, pale-yellow fracture. Odour agreeable, somewhat balsamic and terebinthinous; taste mild and resinous. Becoming plastic when chewed; entirely soluble in ether.

C.C. 90% alpha resin or masticic acid
1-2% vol: oil; masticin insol. in alcohol.

MATICÆ FOLIA.

N.O. Piperaceæ.

Matico Leaves.

The dried leaves of Piper angustifolium, *Ruiz and Pavon* (Artanthe elongata, *Miq.*); *Bentl. and Trim. Med. Pl.* vol. iv. plate 242. Indigenous to the forests of tropical S America.

Characters.—From about four to eight inches long, oblong-lanceolate, tapering towards the apex, cordate and unequal at the base, entire or minutely crenulate, greenish-yellow, very shortly petiolate, reticulated with sunken veins and tessellated above, the veins prominent beneath, and the depressions formed by them densely clothed with hairs. Taste aromatic, bitterish; odour pleasant, feebly aromatic. The leaves as commonly seen in commerce are more or less broken, folded, and compressed into a brittle mass, and have mixed with them a variable proportion of the jointed stems, flowers, and fruit.

Preparation.—Infusum Maticæ, 1 ounce to 1 pint.

P.C. A crystalline acid (Artanthic) Resin Vol: oil 3% [illegible]

MEL.

Honey.

A saccharine secretion deposited in the honeycomb by Apis mellifica, *Linn.* N.O. Hymenoptera Class. Insecta.

Characters and Tests.—When recently separated from the honeycomb, it is a viscid translucent liquid, of a light yellowish or brownish-yellow colour, which gradually becomes partially crystalline and opaque. It has a peculiar odour, and a very sweet characteristic taste. Boiled with water for five minutes and allowed to cool, it does not become blue with the solution of iodine. Incinerated it should not yield more than 0·2 per cent. ash, the solution of which in water acidulated with nitric acid should not afford more than a slight turbidity with solution of chloride of barium. Should not contain more than 55% glucose

Preparation.—Mel Depuratum. Glucose is made on large scale by hydrolising starch with H_2SO_4, hence any free H_2SO_4 left is detected by the $BaCl_2$ test.

P.C. Dextrose, levulose, a minute quantity of formic acid; little wax proteids etc.

MEL BORACIS.

Borax Honey.

Take of

Borax, in fine powder	60 grains	or	2 parts
Glycerine	30 grains	,,	1 part "WT"
Clarified Honey	480 grains	,,	16 parts

Mix.

MEL DEPURATUM.

Clarified Honey.

Take of

Honey	5 pounds

Melt the honey in a water-bath, and strain, while hot, through flannel, previously moistened with warm water.

Preparations.

Confectio Piperis	15 parts in 20
,, Scammonii	1 part in 6, nearly
,, Terebinthinæ	1 part in 2, nearly
Mel Boracis	8 parts in 9, nearly
Oxymel	40 parts in 50
,, Scillæ	

MENTHOL.

N. O. Labiatæ. $C_{10}H_{20}O$. a monohydric alcohol $C_{10}H_{19}OH$

A stearoptene obtained by cooling the oil distilled from the fresh herb of Mentha arvensis, *DC.*, vars. piperascens et glabrata; and of Mentha piperita, *Sm.*

Characters and Tests.—In colourless acicular crystals, usually more or less moist from adhering oil; or in fused crystalline masses. Its melting-point should not exceed 110° F. (43·3° C.) The hardest masses do not melt below 108° F. (42·2° C.) It has the odour and flavour of peppermint, producing warmth on the tongue, or, if air is inhaled, a sensation of coolness. It is sparingly soluble in water, and readily soluble in rectified spirit, the solutions having a neutral reaction. Boiled with sulphuric acid diluted with half its volume of water, menthol acquires an indigo-blue or ultramarine colour, the acid becoming brown. It should entirely be dissipated by the heat of a water-bath.

Dose.—½ to 2 grains.

Off: Prep: Emplastrum Menth 1 in 5.

MEZEREI CORTEX.

N. O. Thymelæaceæ. Mezereon Bark.

The dried bark of Daphne Mezereum, *Linn.*; or of Daphne Laureola, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plates 225 and 226. Europe in mountains regions eastward to Siberia.

Characters.—In long thin more or less flattened strips, which are commonly folded or rolled into disks; or in small quills of various lengths. Inner surface whitish, silky, very tough, and covered externally by an olive-brown or somewhat reddish-brown, readily separable corky layer. No marked odour; taste burning and acrid.

Preparations.

Decoctum Sarsæ Compositum . 55 grains to 1 pint
Extractum Mezerei Æthereum

A.P. (acrid resin), oil, glucoside - daphnin.
mezerein

MICA PANIS.

Crumb of Bread.

The crust of bread is most nutritious & It ~~[illegible]~~ contains a large amount of dextrin formed by exposure to a higher temp than the centre of the loaf.

The soft part of bread made with wheaten flour.

Preparation.—Cataplasma Carbonis.

Should not be used as a pill excipient for $AgNO_3$ as the bread precipitates AgCl.

MISTURA AMMONIACI.

Ammoniacum Mixture.

Take of

Ammoniacum, in coarse powder	¼ ounce . or	. 1 part
Distilled Water . . .	8 fl. oz. . ,,	. 32 fl. parts

18½ grs in 1 fl. oz.

Triturate the ammoniacum thoroughly with a little water into a thin paste; gradually add more water until the mixture assumes a uniform milky appearance; then strain through muslin.

Dose.—½ to 1 fluid ounce.

MISTURA AMYGDALÆ.

Almond Mixture.

Take of

Compound Powder of Almonds .	2 oz. . . . or	. 1 part
Distilled Water . . .	16 fl. oz. . ,,	. 8 fl. parts

55 grs. each ℥.

Rub the powder with a little of the water into a thin paste, then add the remainder of the water, and strain through muslin.

Dose.—1 to 2 fluid ounces.

MISTURA CREASOTI.

Creasote Mixture.

Sometimes required to be made without glacial acetic: In this case have the sides of the bottle wet, drop in the creasote & shake vigorously.

Take of

Creasote . . .	15 minims . . . or	. 1 fluid part
Glacial Acetic Acid .	15 minims . . . ,,	. 1 fluid part
Spirit of Juniper .	½ fluid drachm . ,,	. 2 fluid parts
Syrup . . .	1 fluid ounce . . ,,	. 32 fluid parts
Distilled Water . .	15 fluid ounces . ,,	. 480 fluid parts

ixtures" are liquid preparations of varying [illegible] [illegible] [illegible] in water & designed for internal administration per orem.

Mix the creasote with the acetic acid, gradually add the water, and lastly the syrup and spirit of juniper.

Dose.—1 to 2 fluid ounces.

MISTURA CRETÆ.

Chalk Mixture.

Take of

Prepared Chalk . .	¼ ounce	or .	1 part
Gum Acacia, in powder	¼ ounce	,, .	1 part
Syrup . . .	½ fluid ounce . .	,, .	2 fluid parts
Cinnamon Water .	7½ fluid ounces .	,, .	30 fluid parts

Triturate the chalk and gum acacia with the cinnamon water, then add the syrup, and mix.

Dose.—1 to 2 fluid ounces.

Contains a small proportion of iron as organic salts. (Calumbate, kinate etc.)

MISTURA FERRI AROMATICA.

Aromatic Mixture of Iron.

Take of

Red Cinchona Bark, in powder .	1 ounce
Calumba Root, in coarse powder .	½ ounce
Cloves, bruised	¼ ounce
Fine Iron Wire	½ ounce
Compound Tincture of Cardamoms .	3 fluid ounces
Tincture of Orange Peel . . .	½ fluid ounce
Peppermint Water	a sufficiency

Macerate the cinchona bark, calumba root, cloves, and iron, with twelve fluid ounces of the peppermint water, in a closed vessel for three days, agitating occasionally; then filter the liquid, adding as much peppermint water to the filter as will make the product measure twelve and a half fluid ounces; to this add the tinctures, and preserve the mixture in a well-stoppered bottle.

Dose.—1 to 2 fluid ounces.

MISTURA FERRI COMPOSITA.

Compound Mixture of Iron.

Carbonate of iron is formed which is held in suspension by the myrrh; sulphate of potassium also formed. The object of the sugar is to retard as much as possible the inevitable decomposition.

Take of

Sulphate of Iron		25 grains
Carbonate of Potassium		30 grains
Myrrh Refined Sugar	of each	60 grains
Spirit of Nutmeg		4 fluid drachms
Rose Water		9½ fluid ounces

Reduce the myrrh to powder, add the carbonate of potassium and sugar, and triturate them with a small quantity of the rose water so as to form a thin paste; then gradually add more rose water and the spirit of nutmeg, continuing the trituration and further addition of rose water until about eight fluid ounces of a milky liquid is formed; then add the sulphate of iron dissolved in the remainder of the rose water; mix thoroughly, and preserve the mixture as much as possible from contact with air.

Dose.—1 to 2 fluid ounces.

MISTURA GUAIACI.

Guaiacum Mixture.

11 grs of resin in 1 fl: ℥.

Take of

Guaiacum Resin Refined Sugar	of each	½ ounce	or	1 part
Gum Acacia, powdered		¼ ounce	,,	½ part
Cinnamon Water		1 pint	,,	40 fluid parts

Triturate the guaiacum with the sugar and the gum, adding gradually the cinnamon water.

Dose.—½ to 2 fluid ounces.

MISTURA SCAMMONII.

Scammony Mixture.

Take of

Scammony, in powder	6 grains	or	1 part
Milk	2 fluid ounces	,,	146 fluid parts

Triturate the scammony with the milk, until a uniform emulsion is obtained. The mixture should be made as required for use.

Dose.—1 to 3 fluid ounces.

MISTURA SENNÆ COMPOSITA.

Compound Mixture of Senna.

Synonym.—Black Draught.

Take of

1℥ in 5½ fl ℥ =

Sulphate of Magnesium	4 ounces	or	4 parts
Liquid Extract of Liquorice	1 fl. oz.	,,	1 fl. part
Tincture of Senna	2½ fl. oz.	,,	2½ fl. parts
Compound Tincture of Cardamoms	1½ fl. oz.	,,	1½ fl. parts
Infusion of Senna	15 fl. oz.	,,	15 fl. parts

Dissolve the sulphate of magnesium in the infusion of senna with the aid of a little heat, then add the liquid extract and the tinctures.

Dose.—1 to 1½ fluid ounce.

MISTURA SPIRITUS VINI GALLICI.

Mixture of French Brandy.

Take of

The yolks are added as nutrients & not to form an emulsion.

French Brandy Cinnamon Water } of each	4 fluid ounces
The Yolks of Two Eggs	
Refined Sugar	½ ounce

Rub the yolks and sugar together, then add the cinnamon water and spirit.

Dose.—1 to 2 fluid ounces.

MORI SUCCUS.

Mulberry Juice. N. O. Moraceæ.

The juice of the ripe fruit of Morus nigra, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 229.

Characters.—Of a dark violet or purple colour, with a faint odour, and a refreshing acidulous saccharine taste. Specific gravity about 1·060. C. P. Glucose Citric + malic acids.

Preparation.—Syrupus Mori.

MORPHINÆ ACETAS.

Acetate of Morphine.

Synonyms.—Morphiæ Acetas; Acetate of Morphia.

$C_{17}H_{19}NO_3,HC_2H_3O_2,3H_2O.$

Take of

Hydrochlorate of Morphine . . .	2 ounces
Solution of Ammonia Acetic Acid . . Distilled Water . } of each . .	a sufficiency

Dissolve the hydrochlorate of morphine in one pint of distilled water, and add solution of ammonia until the morphine is precipitated and the liquid rendered slightly alkaline. Collect the precipitate on a filter, wash it with distilled water, then having transferred it to a porcelain dish, add four ounces of distilled water and a sufficient quantity of acetic acid to neutralise and dissolve it. Evaporate the solution by the heat of a water-bath, maintaining acetic acid in slight excess, until it concretes on cooling. Lastly, dry the salt with slight heat, so as to avoid much loss of acetic acid, and reduce it to powder. Keep the product in a well-stoppered bottle.

Acetate of morphine may also be prepared from acetic acid and the pure morphine obtained direct from opium, as described in connection with 'Morphinæ Hydrochloras.'

Characters and Tests.—A white powder, almost entirely soluble in two and a half parts of water at common temperatures; readily soluble in spirit. From its solution potash throws down a precipitate which is dissolved by excess of the alkali. Ignited with free access of air, it leaves no residue. It is affected by nitric acid and perchloride of iron in the same way as hydrochlorate of morphine. When sulphuric acid is added to the salt, acetous vapours are evolved. Twenty grains of the salt forms with one drachm of water a slightly turbid solution, which is rendered clear by the addition of one grain of acetic acid; and this solution when mixed with ammonia in slight excess yields a precipitate which, after washing with a little cold water and drying in a water-bath, weighs fifteen grains. If the salt yield a larger proportion of morphine than this, it should be recrystallised from hot water acidulated with acetic acid.

Dose.—$\frac{1}{8}$ to $\frac{1}{2}$ grain.

Preparations.

Injectio Morphinæ Hypodermica .	1 grain in 10 minims
Liquor Morphinæ Acetatis . .	about 1 grain in 100 fl. grs.

MORPHINÆ HYDROCHLORAS.

Hydrochlorate of Morphine.

Synonyms.—Morphiæ Murias; Morphiæ Hydrochloras; Hydrochlorate of Morphia.

$C_{17}H_{19}NO_3,HCl,3H_2O$.

It may be obtained by the following process:—

Take of

Opium, sliced	1 pound
Chloride of Calcium	$\frac{3}{4}$ ounce
Purified Animal Charcoal . . .	$\frac{1}{4}$ ounce
Diluted Hydrochloric Acid . .	2 fluid ounces, or a sufficiency
Solution of Ammonia Distilled Water . } of each .	a sufficiency

Macerate the opium for twenty-four hours with two pints of the water, and decant. Macerate the residue for twelve hours with two pints of the water, decant, and repeat the process with the same quantity of the water, subjecting the insoluble residue to strong pressure. Unite the liquors, evaporate in a water-bath to the bulk of one pint, and strain through calico. Pour in now the chloride of calcium, previously dissolved in four fluid ounces of distilled water, and evaporate until the solution is so far concentrated that upon cooling it becomes solid. Envelope the mass in a double fold of strong calico, and subject it to powerful pressure, preserving the dark fluid which exudes. Triturate the squeezed cake with about half a pint of boiling distilled water, and, the whole being thrown upon a paper filter, wash the residue well with boiling distilled water. The filtered fluids having been evaporated as before, cooled, and solidified, again subject the mass to pressure; and, if it be still much coloured, repeat this process a third time, the expressed liquids being always preserved. Dissolve the pressed cake in six fluid ounces of boiling distilled water; add the animal charcoal, and digest for twenty minutes; filter, wash the filter and charcoal with boiling distilled water, and to the solution thus obtained add the solution of ammonia in slight excess. Let the pure crystalline morphine which separates as the liquid cools be collected on a paper filter, and washed with cold distilled water until the washings cease to give a precipitate with solution of nitrate of silver acidulated by nitric acid.

From the dark liquids expressed in the above process an additional product may be obtained by diluting them with distilled water, precipitating with solution of potash added in considerable excess, filtering, and supersaturating the filtrate with hydrochloric acid. This acid liquid digested with a little animal charcoal, and again filtered, gives upon the addition of ammonia a small quantity of pure morphine.

Diffuse the pure morphine, obtained as above, through two fluid ounces of boiling distilled water placed in a porcelain capsule kept hot, and add, constantly stirring, the diluted hydrochloric acid, proceeding with caution, so that the morphine may be entirely dissolved and a neutral solution be obtained. Set aside to cool and crystallise. Drain the crystals, and dry them on filtering paper. By further evaporating the mother liquor, and again cooling, additional crystals are obtained.

Characters and Tests.—In white powder or thin prisms of a silky lustre, not changed by exposure to the air, and soluble in twenty-four parts of water at common temperatures; readily soluble in spirit. The aqueous solution gives a white curdy precipitate with nitrate of silver, and a white one with potash, which is redissolved when an excess of the alkali is added. Moistened with strong nitric acid it becomes orange-red, and, with solution of perchloride of iron, greenish-blue. Warmed with strong sulphuric acid and a little arseniate of sodium, a bluish-green tinge results. Ignited with free access of air, it burns without leaving any residue. Twenty grains of the salt dissolved in half an ounce of warm water, with ammonia added in the slightest possible excess, gives on cooling a crystalline precipitate which, when washed with a little cold water, and dried in a water-bath, weighs 16 grains.

Dose.—$\frac{1}{8}$ to $\frac{1}{2}$ grain.

Preparations.

Liquor Morphinæ Hydrochloratis	about 1 grain in 100 fl. grs.
Suppositoria Morphinæ . .	$\frac{1}{2}$ grain to each suppository
,, ,, cum Sapone	$\frac{1}{2}$ grain to each suppository
Tinctura Chloroformi et Morphinæ	1 grain in 1 fluid ounce
Trochisci Morphinæ . . .	$\frac{1}{36}$ grain in each lozenge
,, ,, et Ipecacuanhæ	$\frac{1}{36}$ grain in each lozenge

MORPHINÆ SULPHAS.

Sulphate of Morphine.

$(C_{17}H_{19}NO_3)_2,H_2SO_4,5H_2O.$

Synonyms.—Morphiæ Sulphas; Sulphate of Morphia.

This salt is prepared by diffusing the morphine of the previous process in about twice its weight of boiling distilled water, and adding to the fluid, kept hot, diluted sulphuric acid, gradually and with constant stirring, so that the morphine may be entirely dissolved, and a neutral solution be obtained. Set aside to cool and crystallise. Drain the crystals, and dry them on filtering paper. By further evaporating the mother liquor, and again cooling, additional crystals are obtained.

Characters and Tests.—Colourless, silky, acicular crystals; soluble in twenty-four parts of water at common temperatures; sparingly soluble in rectified spirit. From its solution potash gives a precipitate which is soluble in excess, chloride of barium a white precipitate insoluble in hot hydrochloric acid. Moistened with strong nitric acid, it becomes orange-red; and, with solution of perchloride of iron, greenish-blue.

Dose.—⅛ to ½ grain. Prep: Liq: Morph: Sulph: 1% sol:

Artificial musk is Tri-nitro-isobutyl-methyl-benzol

N.O. Ruminantia
Fam: Cervidae

MOSCHUS.

Musk.

The dried secretion from the preputial follicles of Moschus moschiferus, *Linn.* Hab: Central Asia Male

Chinese Thibet or Tonquin musk is best variety

Characters and Test.—In irregular somewhat unctuous grains of a dark reddish-brown or reddish-black colour, a very strong peculiar diffusible penetrating persistent odour, and a bitterish taste; contained in a roundish or oval sac, from about one and a half to two inches in diameter, which is nearly smooth on one side, and covered on the other or outer side by brownish-yellow or greyish adpressed bristle-like hairs, concentrically arranged around a nearly central orifice. It should be free from earthy impurities.

Dose.—5 to 10 grains. P.C. Ammonia, an acid, cholesterin fat wax gelatinous + albuminous princ.

MUCILAGO ACACIÆ.

Mucilage of Gum Acacia.

Powdered gum should not be used as it does not form a clear mucilage due to changes in the gum produced by drying required.

Take of

Gum Acacia, in small pieces	4 ounces	or	2 parts
Distilled Water	6 fluid ounces	,,	3 fluid parts

Put the gum and water into a covered earthen jar, and stir them frequently until the gum is dissolved. If necessary strain the solution through muslin.

Preparations.

Trochisci Acidi Tannici
„ Acidi Benzoici
„ Bismuthi
„ Catechu
„ Ferri Redacti
„ Ipecacuanhæ

Trochisci Morphinæ
„ „ et Ipecacuanhæ
„ Potassii Chloratis
„ Santonini
„ Sodii Bicarbonatis

This is not a true solution, by long boiling a portion of the starch becomes dissolved.
In this case the starch probably becomes some what altered.

MUCILAGO AMYLI.

Mucilage of Starch.

Take of

Starch . .	120 grains	or . .	24 parts
Distilled Water	10 fluid ounces . .	„ . .	875 fluid parts

Triturate the starch with the water, gradually added, then boil for a few minutes, constantly stirring.

Preparations.

Enema Aloes
„ Magnesii Sulphatis

Enema Opii
„ Terebinthinæ

Should be made as 'eq. t.

The gum does not dissolve, it merely swells up & produces a sort of jelly.

MUCILAGO TRAGACANTHÆ.

Mucilage of Tragacanth.

Take of

Tragacanth, in powder . .	60 grains	or . .	12 parts
Distilled Water .	10 fluid ounces . .	„ . .	875 fluid parts
Rectified Spirit .	2 fluid drachms . .	„ . .	22 fluid parts

Mix the tragacanth with the spirit; then pour in the water, with constant agitation.

MYRISTICA.

Nutmeg. N.O. Myristicaceæ.

The dried seed of Myristica fragrans, *Houtt.* (Myristica officinalis, *Linn.*), divested of its hard coat or shell; *Bentl. and Trim. Med. Pl.* vol. iii. plate 218. Molucca islands cult^d in tropical countries.

Characters.—Oval or roundish, varying in length, but rarely exceeding an inch, greyish-brown externally, and marked with reticulated furrows; internally greyish-red with darker brownish-red veins, so that the transverse section has — due to the infolding of the endopleura. a marbled appearance. Odour strong and pleasantly aromatic; taste agreeably aromatic, warm, and bitterish.

Preparations.

Oleum Myristicæ	
,, ,, Expressum	
Pulvis Catechu Compositus .	. 1 part in 10
,, Cretæ Aromaticus .	. 1 part in 16, nearly
Spiritus Armoraciæ Compositus .	. ½ ounce to 1 gallon
Tinctura Lavandulæ Composita .	. 75 grains to 1 pint

P.C. Vol: oil 2 to 8 %. Fixed oil 25-30 % starch proteids mucilage About 2% ash.

MYRRHA.

Myrrh. N.O. Burseraceæ.

A gum-oleo-resinous exudation obtained from the stem of Balsamodendron Myrrha, *Nees*; *Bentl. and Trim. Med. Pl.* vol. i. plate 60. Hab: E. Africa & S.W. Arabia Shipped from Berbera or Aden to Bombay & thence to Britain.

Characters.—In roundish or irregular-formed tears or masses of agglutinated tears, varying very much in size; reddish-brown or reddish-yellow externally, dry, and more or less covered by a fine powder; brittle, fractured surface irregular, somewhat translucent, rich brown, oily, and frequently marked with opaque whitish spaces or striæ. Odour agreeable, aromatic; taste aromatic, bitter, and acrid.

P.C. 2 4 % Vol: oil 25- 40 % resin
40- 60 % Gum Bitter principle

Preparations.

Decoctum Aloes Compositum .	2·2 grains to 1 fluid ounce
Mistura Ferri Composita .	6 grains to 1 fluid ounce
Pilula Aloes et Myrrhæ . .	1 part in 6
,, Asafœtidæ Composita .	1 part in 3½
,, Rhei Composita . .	1 part in 8, nearly
Tinctura Myrrhæ . . .	54½ grains to 1 fluid ounce

NECTANDRÆ CORTEX.

N.O. Lauraceæ.

Bebeeru Bark.

Inner bark. The dried bark of Nectandra Rodiæi, *Schomb.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 219. Guiana

Characters.—In flattish heavy pieces, from one to two feet long, two to six inches broad, and a quarter of an inch or more thick. Externally greyish-brown, internally dark cinnamon-brown, and with evident longitudinal striæ. It is very hard and brittle, and its fractured surface presents a coarse-grained appearance. Inodorous, but with a strong bitter astringent taste.

Preparation.—Beberinæ Sulphas.

P.C. Beberine identical with buxine & pelosine.

NUX VOMICA.

N.O. Loganiaceæ.

Nux Vomica.

The seeds of Strychnos Nux-vomica, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 178. India & E. Indies.

Characters.—Rounded in outline, from about seven-eighths of an inch to more than an inch in diameter, and on an average nearly a quarter of an inch thick; flattish or concavo-convex, or sometimes more or less bent or irregular in form, rounded or somewhat acute at the margin; marked on one surface by a central scar or hilum, from which a more or less projecting line passes to the margin, where it terminates in a slight prominence. Externally ash-grey or yellowish-grey-green, and glistening from being covered with short satiny hairs; internally horny, and somewhat translucent; no odour, but an extremely bitter taste.

Preparations.

Extractum Nucis Vomicæ	15 per cent. of alkaloids
Strychnina	
Tinctura Nucis Vomicæ	1 grain of alkaloids in 1 fluid ounce

P.C. alkaloids 2.5 – 5.3% Strychnine Brucine + igasurine combined with igasuric acid

The proportion of strychnine is variable but on an average is about 1/3 total alkaloids.

OLEATUM HYDRARGYRI.

Oleate of Mercury.

Take of

Yellow Oxide of Mercury	1 ounce	or	1 part
Oleic Acid	9 ounces	,,	9 parts By weight.

To the oleic acid kept stirred in a mortar add gradually the oxide of mercury, and triturate occasionally until it is all dissolved. Readily reduced N.B. The B.P. does not order this prep: to be heated. The product takes a few hours to completely combine.

Characters.—A light-brown, oleaginous, semi-solid substance composed of oleate of mercury and oleic acid, and having the usual slight smell of oleic acid. Gently warmed, no black precipitate separates. Heated with a piece of copper foil, the latter becomes coated with a film of metallic mercury.

This oleate may be prepared with half the above proportion of oleic acid, the remainder being added just before, or not long before, the oleate is dispensed.

$HgO + 2HC_{18}H_{33}O_2 = Hg(C_{18}H_{33}O_2)_2 + H_2O.$

OLEATUM ZINCI.

Oleate of Zinc.

ZnO will not part with its oxygen hence this prep: may be heated to bring about solution.

Take of

Oxide of Zinc	1 ounce	or	1 part
Oleic Acid	9 ounces	,,	9 parts

Stir the oxide with the oleic acid, and allow the mixture to stand for two hours; then heat on a water-bath until the oxide is dissolved.

Preparation.—Unguentum Zinci Oleati.

Essential Oils which are imported.

Ol Anisi – Europe
" Cajuputi – East Indies
" Eucalypti – Australia etc
" Pini Sylvestris
" Terebinthinae – France America

OLEO-RESINA CUBEBÆ.

Oleo-Resin of Cubebs.

Much of the vol: oil would be lost during the drying necessary before it could be reduced to fine powder

Take of

Cubebs, in coarse powder	2 pounds
Ether	4 pints, or a sufficiency

Pack the cubebs closely in a percolator and pass the ether slowly through the mass until the liquor passes colourless. Let the ether evaporate from the liquor at first spontaneously and then over a water-bath, or recover it by distillation; and transfer the residue to a closed vessel, letting it stand until Cubebin → waxy or crystalline matter ceases to be deposited. Decant the oleo-resin and preserve it in a well-stoppered bottle.

Dose.—5 to 30 minims.

Fixed Oils Greasy substances composed of compounds of fatty acids & glycerine, & in most cases contain more or less of the free acids. They are decomposed by

OLEUM AMYGDALÆ.

Almond Oil. 25% / 56%

Chiefly olein very little palmitin

The oil expressed from the bitter or sweet almond.

Characters.—Thin, pale yellow, nearly inodorous, with a bland oleaginous nutty taste.

Preparations.

Oleum Phosphoratum
Unguentum Cetacei
" Resinæ
" Simplex, and the preparations containing it

500.

OLEUM ANETHI.

Oil of Dill.

The oil distilled in Britain from dill fruit.

Peucedanum graveolens

Characters.—Colour pale yellow, odour pungent, taste hot and sweetish. Sp. G. ·87

Dose.—1 to 4 minims.

P.C. 60% anethene, 10% terpene 30% carvol.

OLEUM ANISI.

Oil of Anise.

The oil distilled in Europe from anise fruit; or in China from star-anise fruit.

Characters.—Colourless or very pale yellow; with the odour of the fruit, and an aromatic sweetish taste. The ordinary oil of anise congeals at temperatures between 50° and 60° F. (10° to 15°·5 C.), and may remain solid at 62° or 63° F. (16°·7 to 17°·2 C.); oil of star-anise only becomes solid at a few degrees above the freezing point of water. chiefly anethol.

Dose.—1 to 4 minims.

Preparations.

Essentia Anisi	1 volume in 5
Tinctura Camphoræ Composita .	½ fluid drachm in 1 pint
„ Opii Ammoniata . .	1 fluid drachm in 1 pint

OLEUM ANTHEMIDIS.

Oil of Chamomile.

The oil distilled in Britain from chamomile flowers.

Characters.—Pale blue or greenish-blue, but gradually becoming yellowish-brown; with the peculiar aromatic taste and odour of the flowers. Contains anthemol.

Dose.—1 to 4 minims.

Preparation.—Extractum Anthemidis.

OLEUM CAJUPUTI.

Oil of Cajuput.

N. O. Myrtaceæ.

The oil distilled from the leaves of Melaleuca minor, *Sm.* (Melaleuca Cajuputi, *Roxb.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 108. East Indies

The leaves are allowed to undergo a fermentative process previous to distillation.

Characters.—A transparent limpid very volatile pale bluish-green liquid, with a strong penetrating agreeable camphoraceous odour, and a warm bitterish aromatic camphoraceous taste succeeded by a sensation of coldness in the mouth.

P.C. chiefly cajuputol.

Dose.—1 to 4 minims.

Preparations.

Linimentum Crotonis . . .	3½ volumes in 8
Spiritus Cajuputi . . .	1 volume in 50

OLEUM CARUI.

Oil of Caraway.

Chiefly carvol.

The oil distilled in Britain from caraway fruit.

Characters.—Colourless or pale yellow when recent, but gradually becoming darker, with the odour of the fruit, and a spicy somewhat acrid taste.

Dose.—1 to 4 minims.

Preparations.

Confectio Scammonii .	2 parts in 150, nearly
Pilula Aloes Barbadensis .	1 fluid drachm in 4 ounces

OLEUM CARYOPHYLLI.

Oil of Cloves.

Contains 90 % eugenol (a phenol)

The oil distilled in Britain from cloves.

Characters.—Colourless or pale yellow when recent, but gradually becoming reddish-brown, having in a high degree the odour and taste of cloves. Sinks in water.

Dose.—1 to 4 minims.

Preparations.

Confectio Scammonii . .	1 part in 150, nearly
Pilula Colocynthidis Composita	20 minims in 1 ounce, nearly
,, ,, et Hyoscyami . . .	20 minims in 1½ ounce, nearly

Mist Olei Ricini

OLEUM CINNAMOMI.

Oil of Cinnamon.

Almost entirely distilled in Ceylon from chips + refuse bark.

The oil distilled from cinnamon bark.

Characters.—Yellowish when recent, but gradually becoming cherry-red, having the odour and taste of cinnamon bark. Sinks in water. Chiefly cinnamic aldehyde

Dose.—1 to 4 minims.

Preparation.—Spiritus Cinnamomi.

OLEUM COPAIBÆ.

Oil of Copaiva. $C_{15}H_{24}$.

The oil distilled from copaiva.

Characters.—Colourless or pale yellow, with the odour and taste of copaiva.

Dose.—5 to 20 minims.

OLEUM CORIANDRI.

Oil of Coriander. chiefly coriandrol.

The oil distilled in Britain from coriander fruit.

Characters.—Pale yellow or colourless, having the odour of the fruit and a mild aromatic taste.

Dose.—1 to 4 minims.

Preparation.—Syrupus Sennæ.

OLEUM CROTONIS. to make into pills use 1. Sap: Animalis + a little glycerine tragacanth.

Croton Oil.

The oil expressed in Britain from the seeds of Croton Tiglium, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 239. yield is 40-60 %. N. O. Euphorbiaceæ.

Characters.—Brownish-yellow to dark reddish-brown, fluorescent, with a viscid consistence which is increased by age, a faint, peculiar, somewhat rancid, disagreeable odour, and an oily acrid taste. Entirely soluble in alcohol.

Dose.—$\frac{1}{3}$ to 1 minim. Indigenous to India + Phillipine islands cultivated in many E. Indies + Japan.

Preparation.—Linimentum Crotonis, 1 volume in 8.

P.C. Glycerides of formic, acetic, isobutyric, tiglinic valerianic, lauric, myristic, palmitic, + stearic acids

OLEUM CUBEBÆ.

Oil of Cubebs.

The oil distilled in Britain from cubebs. yield from 5-1

Characters.—Colourless or greenish-yellow, with the odour and taste of cubebs.

Dose.—5 to 20 minims.

It is composed of a neutral hydrocarbon + a camphor.

OLEUM EUCALYPTI.

Oil of Eucalyptus.

The oil distilled from the fresh leaves of Eucalyptus Globulus, *Labill.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 109; Eucalyptus amygdalina, *Labill.*; and probably other species of Eucalyptus.

Characters and Tests.—Colourless, or pale straw-coloured, becoming darker and thicker by exposure. It has an aromatic odour, and a spicy and pungent flavour, leaving a sensation of coldness in the mouth. It is neutral to litmus paper. Specific gravity about 0·900. Soluble in about an equal weight of alcohol.

P.C. Eucalyptol is chemically identical with cajuputol.

Dose.—1 to 4 minims.

Preparation.—Unguentum Eucalypti.

OLEUM JUNIPERI.

Oil of Juniper.

yield from ·5–2 %

The oil distilled in Britain from the full-grown unripe green fruit of Juniperus communis, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 255. Fruct: Junip: is principally collected in Austria + on a smaller sc in Savoy + Italy.

Dose.—1 to 4 minims.

Sp. G. varies from ·85 to ·9

Characters.—Colourless or pale greenish-yellow, with the characteristic odour of the fruit, and a warm aromatic taste.

Consists of a mixture of hydrocarbons isomeric with terebinthene

Preparation.—Spiritus Juniperi, 1 volume in 50.

OLEUM LAVANDULÆ.

Oil of Lavender. Lavandol. N.O. Labiatæ.

The oil distilled in Britain from the flowers of Lavandula vera, *DC.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 199.

Characters.—Pale yellow or nearly colourless, with the very fragrant odour of the flowers, and a hot bitter aromatic taste.

Dose.—1 to 4 minims.

Preparations.

Linimentum Camphoræ Compositum .	60 minims in 1 pint
Spiritus Lavandulæ	1 volume in 50
Tinctura Lavandulæ Composita . .	45 minims in 1 pint

OLEUM LIMONIS. The only vol. oil in the B.P.

Oil of Lemon. not prepared by distillation.

A volatile oil obtained by mechanical means from fresh lemon peel.

Characters.—Pale yellow, with a very fragrant odour, and a warm bitterish aromatic taste. Chiefly citrene with citral.

Dose.—1 to 4 minims.

Preparations.

Linimentum Potassii Iodidi cum Sapone	1 fluid drachm to 14 fluid ounces
Spiritus Ammoniæ Aromaticus	
Mistura Olei Ricini.	

OLEUM LINI.

Linseed Oil.

The oil expressed in Britain without heat from linseed. By cold pressure 16-20 % hot pressure 25-28 %.

Characters.—Viscid, yellow, with a faint odour, and bland oleaginous taste. It gradually thickens by exposure to the air.

C.C. chiefly linolein with palmitin & myristin.
By exposure it dries to linoxyn.

OLEUM MENTHÆ PIPERITÆ.

Oil of Peppermint.

The oil distilled in Britain from fresh flowering peppermint, Mentha piperita, *Sm.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 203.

Characters.—Colourless, pale yellow, or greenish-yellow when recent, but becoming gradually thicker and reddish by age, with the odour of peppermint, and a strong penetrating aromatic taste, followed by a sensation of coldness in the mouth.

Dose.—1 to 4 minims. P.C. Menthol.

Preparations.

Aqua Menthæ Piperitæ .	1½ fluid drachm to 1 gallon
Essentia Menthæ Piperitæ .	1 volume in 5
Pilula Rhei Composita .	1 minim in 1 drachm, nearly
Spiritus Menthæ Piperitæ .	1 volume in 50
Tinctura Chloroformi et Morphinæ . . .	1 minim in 2 fluid ounces

OLEUM MENTHÆ VIRIDIS.

Oil of Spearmint.

The oil distilled in Britain from fresh flowering spearmint, Mentha viridis, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 202.

Characters.—Colourless, pale yellow, or greenish-yellow when recent, but becoming reddish by age, with the odour and taste of the herb. Contains $C_{10}H_{16}$ + $C_{10}H_{14}O$

Dose.—1 to 4 minims.

Preparation.

Aqua Menthæ Viridis . .	1½ fluid drachm to 1 gallon

OLEUM MORRHUÆ.

N.O. Teleostia.

Cod-liver Oil.

The oil extracted from the fresh liver of the cod, Gadus Morrhua, *Linn.*, by the application of a heat not exceeding 180° F. (82°·2 C.) Hab: N. Atlantic ocean.

Characters and Test.—Pale yellow, with a slight fishy odour, and bland fishy taste. A drop of sulphuric acid added to a few drops of the oil on a porcelain slab developes a violet colour, which soon passes to a yellowish or brownish red.

Dose.—1 to 8 fluid drachms.

P.C. Chiefly olein with palmitin + stearin; iodine ·001 to ·002% traces of Cl; Br; P, + S ·3% cholesterin probably also butyric + acetic acids.

OLEUM MYRISTICÆ.

Volatile Oil of Nutmeg.

The oil distilled in Britain from nutmeg.

Characters.—Colourless or straw-yellow, having the odour and taste of nutmeg.

Dose.—1 to 4 minims.

P.C. chiefly myristicene also myristicol.

Preparations.

Pilula Aloes Socotrinæ	
Spiritus Ammoniæ Aromaticus .	1 in 300, about
,, Myristicæ . . .	1 volume in 50

OLEUM MYRISTICÆ EXPRESSUM.

Expressed Oil of Nutmeg.

Synonym.—Myristicæ Adeps.

This is not a fat + does not yield glycerine on saponification.

A concrete oil obtained by means of expression and heat from nutmeg.

Characters.—Orange-brown or orange-yellow, more or less mottled, firm consistence, and fragrant odour like that of nutmeg.

P.C. Mainly myristin with a little myristic acid olein palmitin resin colouring matter 6-8% Vol: oil.

Preparations.

Emplastrum Calefaciens | Emplastrum Picis

OLEUM OLIVÆ.

N.O. Oleaceæ.

Olive Oil.

The oil expressed from the ripe fruit of Olea europæa, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 172.

Asia + S. Europe

Characters.—Pale yellow or greenish-yellow, with a very faint agreeable odour, and a bland oleaginous taste; congeals partially at about 36° F. (2°·2 C.)

Preparations.

Charta Epispastica
Emplastrum Ammoniaci cum Hydrargyro
" Hydrargyri
" Picis
" Plumbi
" Saponis Fuscum
Enema Magnesii Sulphatis
Linimentum Ammoniæ
" Calcis
" Camphoræ
Unguentum Cantharidis
" Hydrargyri Compositum
" Hydrargyri Nitratis
Unguentum Veratrinæ.

P.C. Mainly olein; the solid fats are chiefly palmatin + arac
+ possibly stearin also cholesterin.

OLEUM PHOSPHORATUM.

Phosphorated Oil.

Cut P. under water

Take of
Phosphorus } of each . . . a sufficiency
Oil of Almonds }

Heat oil in a flask on a sand bath with thermometer in the oil. Filter from any albuminous matter. The heat also helps to thoroughly dry the oil

Heat the oil in a porcelain dish to about 300° F. (149° C.), and keep it at this temperature for about fifteen minutes, then let it cool, and filter it through paper. Put 4 fluid ounces of this oil into a stoppered bottle, capable of holding 4½ fluid ounces, and add to it 16 grains of pure dry phosphorus. Immerse the bottle in hot water until the oil has acquired the temperature of 180° F. (82°·2 C.), removing the stopper two or three times to allow the escape of expanded air, then shake the oil and phosphorus together until the latter is entirely dissolved.

Thermometer in the water

Do not use a naked flame.

Characters.—A clear straw-coloured oil; phosphorescent in the dark. It contains about one per cent. of phosphorus.[1]

Dose.—5 to 10 minims.

OLEUM PIMENTÆ.

Oil of Pimento.

The oil distilled in Britain from pimento.

Characters.—Colourless or slightly yellowish-red when recent, but becoming brown by age, having the odour and taste of pimento. Sinks in water.

Dose.—1 to 4 minims. Contains $C_{15}H_{24}$ — $C_{10}H_{12}O_2$.

OLEUM PINI SYLVESTRIS.

Fir-wool Oil.

Distilled with steam, the oil separated + filtered.

The oil distilled from the fresh leaves of Pinus sylvestris, *Linn.*; *Lamb. Gen. Pin.* plate 1. Hab: Scotland Finland Russia + Germany.

Characters and Tests.—Colourless or nearly so, with an aromatic lavender-like odour and a pungent but not unpleasant flavour. Specific gravity not below 0·870. Soluble in about seven times its volume of rectified spirit. Hydrocarbons isomeric with terebinthinene.

Preparation.—Vapor Olei Pini Sylvestris.

OLEUM RICINI.

Castor Oil.

N.O. Euphorbiaceæ

The oil expressed from the seeds of Ricinus communis, *Linn.*; *Bot. Mag.* plate 2209. A native of S. Asia. Cult.d in Egypt Italy + U.S.A

Seeds yield 50% fatty oil.

Characters.—Viscid, colourless or pale straw-yellow, having scarcely any odour, and a mild taste at first but subsequently acrid and unpleasant. Entirely soluble in one volume of absolute alcohol, and in four volumes of rectified spirit. //

Dose.—1 to 8 fluid drachms.

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[1] *Oleum Phosphoratum*, B. P. Additions, 1874, contained about 0·75 per cent.

?C. Composed of the glycerides of several fatty acids chiefly ricinic or ricinoleic. Distilled with lime yields Œnanthol.

Preparations.

Collodium Flexile	1 in 50, about
Linimentum Sinapis Compositum .	1 fluid drachm to 1 fluid ounce
Pilula Hydrargyri Subchloridi Composita	
Mistura Olei Ricini	ʒvi f in ℥ij f.

OLEUM ROSMARINI.

N.O. Labiatæ.

Oil of Rosemary.

The oil distilled from the flowering tops of Rosmarinus officinalis, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 207.

Characters.—Colourless or pale yellow, with the odour of rosemary, and a warm aromatic taste.

Contains about 80 % $C_{10}H_{16}$ C_{10} borneol + cineol.

Dose.—1 to 4 minims.

Preparations.

Linimentum Saponis . .	1 fluid drachm in 7 fluid ounces, nearly
Spiritus Rosmarini . .	1 volume in 50
Tinctura Lavandulæ Composita	5 minims in 1 pint

OLEUM RUTÆ.

Oil of Rue.

Rutaceæ.

The fruit yields largest % of oil (10%)

The oil distilled from the fresh herb of Ruta graveolens, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 44.

This is the most aqueous vol: oil of any in the BP

Characters.—Pale yellow when recent, with a strong disagreeable odour and a bitter acrid taste.

Dose.—1 to 4 minims.

Chiefly methyl nonyl ketone $CH_3COC_9H_{19}$.

OLEUM SABINÆ.

Oil of Savin.

The oil distilled in Britain from the fresh tops of Juniperus Sabina, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 254. $C_{10}H_{16}$.

Characters.—Colourless or pale yellow, with the odour of the plant and a bitterish acrid taste.

Dose.—1 to 4 minims.

The so-called W. Indian S. oil is not obtained from any species of Santalum but probably from a Rutaceous plant.

OLEUM SANTALI.

Oil of Sandal Wood.

l wood is largely for cabinet making protecting it from s of insects.

Synonym.—Oleum Santali Flavi.

The oil distilled from the wood of Santalum album, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 252. N.O. Santalaceæ.

Characters and Tests.—Thick in consistence, pale yellow in colour, a strongly aromatic odour, a pungent and spicy flavour, and neutral or slightly acid in reaction. Its specific gravity is usually about 0·96. It is readily soluble in alcohol.

Bulk distilled in Germany also distd in Mysore + in England.

Dose.—10 to 30 minims.

Cedar oil has been used as an adulterant. | yield 1·5 – 2·5%.

cassar 'oil is obtained from a species of Santalum.

OLEUM SINAPIS.

Oil of Mustard. C_3H_5-NCS.

The oil distilled with water from black mustard seeds after the expression of the fixed oil.

Characters.—Colourless or pale yellow. Specific gravity 1·015 to 1·020. Boiling point about 298° F. (147°·8 C.) Dissolves readily in alcohol and ether, and to a slight extent in water. Has an intensely penetrating odour and a very acrid burning taste. Applied to the skin it produces almost instant vesication.

Preparation.—Linimentum Sinapis Compositum.

ustard Oils This term is applied to all organic compounds ntaining alcohol radicals united with sulphocyanogen. The ficial oil is a compound of the allyl radical + is termed llylthiocarbamide.

$K-S-C\equiv N$ Sulphocyanate of Potassium $K-N=C=S$ Iso sulphocyanate of K
$_3H_5-S-C\equiv N$ " " Allyl $C_3H_5-N=C=S$ " " of allyl
(Allyl thiocarbamide)

OLEUM TEREBINTHINÆ.

N.O. Coniferæ.

Oil of Turpentine.

The oil distilled, usually by aid of steam, from the oleo-resin (turpentine) obtained from Pinus australis, *Mich.* (Pinus palustris, *Mill.*), Pinus Tæda, *Linn.*, and sometimes from Pinus Pinaster, *Solander*, and Pinus sylvestris, *Linn.*; *Lamb. Ill. Gen. Pin.* 2nd edit., plates 20, 17 and 18, 9 and 10, and 1; rectified if necessary.

N. America

Europe.

Characters and Tests.—Limpid, colourless, with a strong peculiar odour, which varies in the different kinds, and a pungent and bitterish taste. It commences to boil at about 320° F. (160° C.), and almost entirely distils below 356° F. (180° C.), little or no residue remaining. S.G. ·85 – ·87

I acts on it with violence evolving HI + leaving cymene. Gaseous HCl unites with the oil forming the so called artificial camphor. The oil to be first dissolved in Glacial acetic acid.

Dose.—10 minims to 4 fluid drachms. Consists of Terebinthene $C_{10}H_{16}$

Preparations.

Confectio Terebinthinæ
Enema Terebinthinæ
Linimentum Terebinthinæ
Linimentum Terebinthinæ Aceticum
Unguentum Terebinthinæ

OLEUM THEOBROMATIS.

Oil of Theobroma.

N.O. Sterculiaceæ.

Synonym.—Cacao Butter.

A concrete oil obtained by expression and heat from the ground seeds of Theobroma Cacao, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 38.

Characters.—Of the consistency of tallow; colour yellowish; odour resembling that of chocolate; taste bland and agreeable; fracture clean, presenting no appearance of foreign matter. Does not become rancid from exposure to the air. It usually melts at temperatures between 86° and 95° F. (30° and 35° C.)

P.C. Stearin, laurin, arachin, + olein with glycerides of formic acetic + butyric acids.

Preparations.

Suppositoria Acidi Tannici
,, Hydrargyri
,, Iodoformi
,, Morphinæ
,, Plumbi Composita

of the most difficult adult-
rant is Ext. Papav: Opium
adulterated is generally found
mouldy in the interior.

OPIUM.

Opium.

Persia, Bulgaria + Asia M. are
the geographical sources of the opiums
occurring in the English market.
The so called Alexandrian opium
is the dross of of the Smyrna market
"faked."

The juice obtained in Asia Minor by incision from the unripe capsules of Papaver somniferum, *Linn.*, inspissated by spontaneous evaporation.

Persian
opium for Indian consumption
is very largely mixed
with oil to
facilitate
burning.

Any ordinary variety of opium may be employed as a source of alkaloids, and of extract of opium of official strength; but, when otherwise used for officially recognised purposes, opium must be that obtained in Asia Minor, and must be of such a strength that, when dried and powdered and the powder heated to 212° F. (100° C.) until it ceases to lose moisture, and the product tested by the appended method, or any trustworthy method, it shall yield, as nearly as practicable, 10 per cent. of morphine; that is, 100 parts of such dry powdered opium shall yield not less than 9·5 parts, and not more than 10·5 parts, of morphine.

Characters.—In rounded, irregularly-formed, or flattened masses, varying in weight, but commonly from about eight ounces to two pounds, usually covered with portions of poppy leaves, and scattered over with the reddish-brown chaffy fruits of a species of Rumex. When fresh, plastic, and internally somewhat moist, coarsely granular, and reddish- or chestnut-brown; but becoming harder by keeping, and darkening to blackish-brown. Odour strong, peculiar, narcotic; taste nauseously bitter.

Test.—Take of

Powdered Opium, dried at 212° F. (100° C.)	140 grains
Lime, freshly slaked	60 grains
Chloride of Ammonium	40 grains
Rectified Spirit Ether Distilled Water } of each	a sufficiency

The lime liberates the alkaloids & these dissolve in the $Ca(OH)_2$ part of the Ca being pptd as meconate

Triturate together the opium, lime, and 400 grain-measures of distilled water in a mortar until a uniform mixture results; then add 1000 grain-measures of distilled water and stir occasionally during half an hour. Filter the mixture through a plaited filter about three inches in diameter into a wide-mouthed bottle or stoppered flask (having the capacity of about six fluid ounces and marked at exactly 1040 grain-measures) until the filtrate reaches this mark. To the filtered liquid (representing 100 grains of opium) add 110 grain-measures of rectified spirit and 500 grain-measures of ether, and shake the mixture; then add the chloride of ammonium, shake well and frequently during half an hour, and set it aside for twelve hours. Counterbalance two small filters; place one within the other in a small funnel, and decant the ethereal layer as completely as practicable upon the inner filter. Add 200 grain-measures of ether to the contents of the bottle and rotate it; again decant the ethereal layer upon the filter, and afterwards wash the latter with 100 grain-measures of ether added slowly and in portions. Now let the filter dry in the air, and pour upon it the liquid in the bottle in portions, in such a way as to transfer the greater portion of the crystals to the filter. When the fluid has passed through the filter, wash the bottle and transfer the remaining crystals to the filter, with several small portions of distilled water, using not much more than 200 grain-measures in all, and distributing the portions evenly upon the filter. Allow the filter to drain, and dry it, first by pressing between sheets of bibulous paper, and afterwards at a temperature between 131° and 140° F. (55° and 60° C.), and, finally, at 194° to 212° F. (96° to 100° C.) Weigh the crystals in the inner filter, counterbalan-

This keeps in solution the codeine &c the NH_4Cl ppts the morphine i.e. $2NH_4Cl + Ca(OH)_2 = CaCl_2 + 2NH_4OH$

cing by the outer filter. The crystals should weigh ten grains, or not less than nine and a half and not more than ten and a half grains, corresponding to about ten per cent. of morphine in the dry powdered opium.

Dose.—½ grain to 3 grains.

Preparations—chiefly of Opium in powder.

Codeina	— — —	Dose. 2 grs
Confectio Opii . . .	1 part in 40, nearly — — — —	20 grs
Emplastrum Opii . .	1 part in 10	
Enema Opii . . .	½ fl. drm. Tincture to 2 fl. oz.	
Extractum Opii . .	about 1 part from 2 — — —	2 grs
,, ,, Liquidum.	22 grs. Extract in 1 fl. oz. nearly	40 m.
Linimentum Opii . .	1 volume Tincture in 2 volumes	
Morphinæ Acetas . .	about 1 part from 8 or 10 — — — —	½ gr
,, Acetatis Liquor .	4½ grs. Acetate in 1 fl. oz. — —	60 m.
,, Bimeconatis Liquor	5½ grs. Bimeconate in 1 fl. oz. —	40 m.
,, Hydrochloras .	about 1 part from 8 or 10 — — —	½ gr
,, Hydrochloratis Liq.	4½ grs. Hydrochlorate in 1 fl. oz. — —	60 m
,, Hypoderm. Injec.	1 grain Acetate in 10 minims	1 or 2 m 5
,, Sulphas .	about 1 part from 7½ — —	½ gr
,, Liquor	1% solution — —	60 m.
Pilula Ipecacuanhæ cum Scilla . .	1 part in 23, nearly — — —	10 grs
,, Plumbi cum Opio .	1 part in 8 — — — —	5 grs
,, Saponis Composita	1 part in 6, nearly — — —	5 grs
Pulvis Cretæ Aromaticus cum Opio . .	1 part in 40 — —	40 grs
,, Ipecacuanhæ Compositus . .	1 part in 10 —	15 grs
,, Kino Compositus .	1 part in 20 — — — —	20 grs
,, Opii Compositus .	1 part in 10 — — — — — —	5 grs
Suppositoria Plumbi Composita	1 grain in each suppository	
Tinctura Camphoræ Composita	2 grains to 1 fluid ounce —	60 m
,, Opii . . .	33 grains to 1 fluid ounce, nearly — —	40 m
,, ,, Ammoniata .	5 grains to 1 fluid ounce — —	60 m
Trochisci Opii . . .	$\frac{1}{10}$ grain of Extract in each	6 loz
Unguentum Gallæ cum Opio .	32 grains to 1 ounce	
Vinum Opii	22 grs. Extract in 1 fl. oz. nearly	40 m
Apomorph: Hydrochlor		
,, ,, Inj Hypoderm: — — —		8 m.

OS USTUM.

Bone Ash.

The residue of bones which have been burned to a white ash in contact with air. Consists principally of phosphate of calcium mixed with about 10 per cent. of carbonate of calcium, and a little fluoride of calcium, silica, and phosphate of magnesium.

Preparations for which Bone Ash is used.

Calcii Phosphas	Sodii Phosphas

12½% Albumen.

OVI ALBUMEN.

Egg Albumen.

The liquid white of the egg of Gallus Bankiva *var.* domesticus, *Temminck.*

Class Aves
Order Gallinæ

Indig: to Java ·
Cochin Ch

OVI VITELLUS.

Yolk of Egg.

3% albumen
Nearly ½ % cholesterin
also lactic acid
+ 1.5% inorganic
salts.

The yolk of the egg of Gallus Bankiva *var.* domesticus, *Temminck.*

Preparation.—Mistura Spiritus Vini Gallici.

An oxymel is a thick liquid
containing a large proportion of
honey; & also
acetic acid.

OXYMEL.

Oxymel.

Take of

Clarified Honey .	40 ounces	or . .	8 parts
Acetic Acid .	5 fluid ounces . .	,, . .	1 fluid part
Distilled Water .	5 fluid ounces . .	,, . .	1 fluid part

Liquefy the honey by heat, and mix with it the acetic acid and water.

Dose.—1 to 2 fluid drachms.

OXYMEL SCILLÆ.

Oxymel of Squill.

Take of

Vinegar of Squill	1 pint	or	5 fluid parts
Clarified Honey	2 pounds	,,	8 parts

Mix and evaporate by a water-bath until the product when cold shall have a specific gravity of 1·32.

Dose.—½ to 1 fluid drachm.

PAPAVERIS CAPSULÆ.

Poppy Capsules. N.O. Papaveraceæ.

The nearly ripe dried capsules of Papaver somniferum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 18. From plants cultivated in Britain. Western Asia.

Characters.—Rounded, ovoid-rounded, or somewhat oblong, from two to three inches in diameter, suddenly contracted below into a neck, and crowned above by the stellately-arranged stigmas; yellowish or yellowish-brown externally, and frequently dotted with blackish spots. Presenting internally a variable number of thin brittle parietal placentas directed towards the centre of the cavity, and a very large number of loose, small, reniform, whitish, slate-coloured, or nearly black seeds. Inodorous; taste slightly bitter,

Preparations.

Decoctum Papaveris	2 ounces to 1 pint
Extractum Papaveris	1 part from 3, nearly
Syrupus Papaveris	1 part to 3, nearly

P.C. = alkaloids in variable proportion from traces to ·1% (occasionally as much as ·2%.) Morphine narcotine rhœadine narceine codeine + papaverosine little meconic acid citric + tartaric.

PARAFFINUM DURUM.

Hard Paraffin.

Synonyms.—Paraffin; Paraffin Wax; Solid Paraffin. C_nH_{2n+2}

A mixture of several of the harder members of the paraffin series of hydrocarbons; usually obtained by dis-

le, a bituminous coal is destructively distilled in retorts +
ds (1) An illuminating gas (2) an oil (3) a coke. The
le oil is introduced into refrigerating cylinders & as the temp:
ls the more solid hydrocarbons crystallize out. This is collected
ther remelted + purified by filtration thro' animal charcoal.

tillation from shale, separation of the liquid oils by refrigeration, and purification of the solid product.

Characters and Tests.—Colourless, semi-transparent, crystalline, inodorous and tasteless, slightly greasy to the touch. Specific gravity 0·82 to 0·94. Insoluble in water, slightly soluble in absolute alcohol, freely soluble in ether. It melts at 110° to 145° F. (43°·3 to 62°·8 C.), and burns with a bright flame, leaving no residue.

Preparations.

Unguentum Acidi Borici
,, ,, Carbolici
,, ,, Salicylici
,, Eucalypti
,, Glycerini Plumbi Subacetatis

Unguentum Hydrargyri Oxidi Rubri
,, Potassæ Sulphuratæ
,, Sulphuris Iodidi
,, Veratrinæ

PARAFFINUM MOLLE.

Soft Paraffin.

Synonyms.—Petrolatum; Pétroléine; Unguentum Paraffinum.

A semi-solid mixture containing some of the softer or more fluid members of the paraffin series of hydrocarbons; usually obtained by purifying the less volatile portions of petroleum. It is known in commerce by various fanciful names.

Characters.—White or yellowish, translucent, soft, greasy; free from acidity, alkalinity, or any unpleasant odour or flavour, even when warmed to 120° F. (48°·9 C.) Specific gravity, at the melting point, from about 0·840 to 0·870. Melts at 95° to 105° F. (35° to 40°·5 C.), or even somewhat higher, volatilises without giving acrid vapours, and burns with a bright flame, leaving no residue. Insoluble in water, slightly soluble in absolute alcohol, freely soluble in ether, chloroform, benzol, &c. It is not saponified by solutions of alkalies.

Petroleum oil obtained from the earth is 1st submitted to distillat
A portion comes over, + the residue left in the retort is know as asphal
The distillate is now fractionated. The first runnings form petrol
ether (Benzoline) The second portion yields illuminating oils ("Par
oil" of the shops). The third portion yields viscid lubricating "miner
The residue left in retort consists of semi solid members of paraffin
This is decolourized with $K_2Cr_2O_7$ + H_2SO_4 then filtered thro' beds of anima
charcoal + pipe clay; when it constitutes Paraff: Molle.

the paraffin: molle were sublimed a 2nd time it would be
composed, with production of a lower paraffin + an olefine.

Preparations.

Unguentum Acidi Borici
,, ,, Carbolici
,, ,, Salicylici
,, Eucalypti
,, Glycerini Plumbi Subacetatis
,, Hydrargyri Oxidi Rubri
,, ,, Nitratis Dilutum
,, Potassæ Sulphuratæ
,, Sulphuris Iodidi
,, Veratrinæ
,, Zinci Oleati

PAREIRÆ RADIX.

Pareira Root. N.O. Menispermaceæ.

The dried root of Chondrodendron tomentosum, *Ruiz and Pavon*; *Bentl. and Trim. Med. Pl.* vol. i. plate 11. Brazil.

Characters and Test.—In long nearly cylindrical more or less twisted pieces, from about three-quarters of an inch to two or more inches thick; covered with a thin blackish-brown bark, and marked externally with longitudinal furrows and transverse ridges and fissures. Internally yellowish- or brownish-grey, with well-marked concentric or more or less eccentric circles of porous wood, separated into wedge-shaped portions by large medullary rays, and when cut presenting a waxy appearance. No odour, taste bitter. Its decoction, when cold, is turned inky bluish-black by solution of iodine. The drug contains an alkaloid Pelosine or Cissampeline chemically identical with Beberine + Buxine.

Preparations.

Decoctum Pareiræ . . . 1¼ ounce to 1 pint
Extractum Pareiræ
,, ,, Liquidum

PEPSIN. πεπτω · I digest.

Pepsin.

A preparation of the mucous lining of the fresh and healthy stomach of the pig, sheep, or calf. It may be prepared as follows:—

in is a nitrogenous substance existing in the gastric juice, + viscid matter in the peptic glands + on the walls of the ach of animals.

The stomach of one of these animals recently killed having been cut open and laid on a board with the inner surface upwards, any adhering portions of food, dirt, or other impurity, are to be removed and the exposed surface slightly and rapidly washed with a little cold water; the cleansed mucous membrane is then to be scraped with a blunt knife or other suitable instrument, with some pressure, and the viscid pulp thus obtained is to be immediately spread over the surface of glass or glazed earthenware and quickly dried at a temperature not exceeding 100° F. (37°·8 C.). The dried residue is to be reduced to powder and preserved in a stoppered bottle.

Fasu

Characters and Tests.—A light yellowish-brown powder, having a faint, but not disagreeable odour, and a slightly saline taste, without any indication of putrescence. Very little soluble in water or spirit. Two grains of it with an ounce of distilled water, to which five minims of hydrochloric acid have been added, form a mixture in which at least 100 grains of hard-boiled white of egg, passed through wire gauze of 36 meshes per linear inch and made of No. 32 brass or copper wire, will dissolve on their being well mixed, digested, and well stirred together for thirty minutes at a temperature of 130° F. (54°·4 C.)

Pepsin converts albuminoids into peptones which are readily soluble in water & are not pptd by heat.
coagulated

Dose.—2 to 5 grains.

PHOSPHORUS.
Phosphorus.

A non-metallic element obtained from bones.

Characters and Tests.—A semi-transparent, colourless, wax-like solid, which emits white vapours when exposed to the air. Specific gravity 1·77. It is soft and flexible at common temperatures, melts at 110° F. (43·3° C.), ignites in the air at a temperature a little above its melting point, burning with a luminous flame and producing dense white fumes. Insoluble in water, but soluble in ether and in boiling oil of turpentine.

$$Ca_3(PO_4)_2 + 2H_2SO_4 = 2CaSO_4 + CaH_4(PO_4)_2$$

$$CaH_4(PO_4)_2 = Ca(PO_3)_2 + 2H_2O$$

$$3Ca(PO_3)_2 + 5C_2 = P_4 + Ca_3(PO_4)_2 + 10CO.$$

Preparations.

Acidum Phosphoricum Concentratum
Acidum Phosphoricum Dilutum
Oleum Phosphoratum
Pilula Phosphori

PHYSOSTIGMATIS SEMEN.

Calabar Bean.

Synonym.—Physostigmatis Faba. N.O. Leguminosæ.

The dried seed of Physostigma venenosum, *Balfour*, *Trans. Royal Soc. Edinb.* vol. xxii. page 305. Tropical W Africa near the mouth of the Niger + Old Calabar.

Characters and Test.—From about one inch to one inch and a quarter long, three-quarters of an inch broad, and half an inch or somewhat more in thickness; oblong and more or less reniform, and with a long broad blackish furrow running entirely along its convex side. Testa hard, brittle, roughish, deep chocolate-brown or brownish-red, and enclosing a closely-adhering nucleus which principally consists of two hard white brittle cotyledons separated from each other by a somewhat large cavity. Inodorous, and no marked taste beyond that of an ordinary bean. It yields its virtues to alcohol, and imperfectly to water. The cotyledons when″ moistened with solution of potash acquire a permanent pale″ yellow colour.

P.C. Physostigmine (in the embryo) Calabarine, etc.

Dose, in powder.—1 to 4 grains.

Preparations.

Extractum Physostigmatis
Physostigmina

Starch 48%.
Proteids 23%.

PHYSOSTIGMINA.

Physostigmine.

Synonym.—Eserine.

$C_{15}H_{21}N_3O_2$.

An alkaloid obtained from the alcoholic extract of Calabar bean, by dissolving the extract in water, adding bicarbonate of sodium, shaking the mixture with ether, and evaporating the ethereal liquid.

Characters and Tests.—In colourless or pinkish crystals.

slightly soluble in water, but readily soluble in alcohol and in diluted acids. The aqueous solution has an alkaline reaction, when warmed with or when shaken with dilute solution of potash becomes red, and when evaporated to dryness over a water-bath leaves a bluish residue, the acidified solution of which is beautifully dichroic, being blue and red. Physostigmine causes contraction of the pupil of the eye.

Preparation.—Lamellæ Physostigminæ. $\frac{1}{1000}$ gr in each.

PILOCARPINÆ NITRAS.

Nitrate of Pilocarpine.

$C_{11}H_{16}N_2O_2,HNO_3$.

The nitrate of an alkaloid obtained from extract of jaborandi by shaking it with chloroform and alkali, evaporating the chloroformic solution, neutralising the product with nitric acid and purifying by recrystallisation.

Characters and Tests.—In a white crystalline powder or in acicular crystals; soluble in eight or nine parts of water at common temperatures; slightly soluble in cold, freely soluble in hot rectified spirit. Strong sulphuric acid forms with it a yellowish solution which, on the addition of bichromate of potassium, gradually acquires an emerald-green colour. It leaves no ash when burned with free access of air. It causes contraction of the pupil of the eye.

Dose.—$\frac{1}{20}$ to $\frac{1}{2}$ grain.

Has a strong odour of caraway.

PILULA ALOES BARBADENSIS.

Pill of Barbadoes Aloes.

1 in 2 (nearly)

Take of

Barbadoes Aloes, in powder	2 ounces	or	16 parts
Hard Soap, in powder	1 ounce	,,	8 parts
Oil of Caraway	1 fl. drachm	,,	1 fl. part
Confection of Roses	1 ounce	,,	8 parts

Beat all together until thoroughly mixed.

Dose.—5 to 10 grains.

ill is a small round or a oval mass, which can be easily
llowed, consisting of an active medicine or medicines + an
ipient.

powerful odour

PILULA ALOES ET ASAFŒTIDÆ.

Pill of Aloes and Asafœtida.

About 1 in 3½.

Take of

Socotrine Aloes, in powder	1 ounce	or	1 part
Asafœtida	1 ounce	,,	1 part
Hard Soap, in powder	1 ounce	,,	1 part
Confection of Roses	abt. 1 oz. or a sufficiency	,,	1 part or a sufficiency

Beat all together, until thoroughly mixed.

Dose.—5 to 10 grains.

PILULA ALOES ET FERRI.

Pill of Aloes and Iron.

1 in 5½ nearly.

Take of

Sulphate of Iron	1½ ounce	or	1½ part
Barbadoes Aloes, in powder	2 ounces	,,	2 parts
Compound Powder of Cinnamon	3 ounces	,,	3 parts
Confection of Roses	4 ounces	,,	4 parts (Syr + P. Trag preferable)

Reduce the sulphate of iron to powder, rub it with the aloes and compound powder of cinnamon, and adding the confection, make the whole into a uniform mass.

Dose.—5 to 10 grains.

Soap can not be used with pills containing salts of Fe as free alkali would cause their decomposition forming oleates; also with Pb Bi Cu or Hg.

PILULA ALOES ET MYRRHÆ.

Pill of Aloes and Myrrh.

About 1 in 5.

Take of

Socotrine Aloes	2 ounces	or	2 parts
Myrrh	1 ounce	,,	1 part
Saffron, dried	½ ounce	,,	½ part
Treacle	1 ounce	,,	1 part
Glycerine			a sufficiency

Triturate the aloes, myrrh, and saffron together; then add the treacle and sufficient glycerine, and beat them together into a uniform mass.

Dose.—5 to 10 grains.

PILULA ALOES SOCOTRINÆ.

Pill of Socotrine Aloes.

1 in 2 nearly

Has a strong odour of nutmeg.

Take of

Socotrine Aloes, in powder	2 ounces	or	16 parts
Hard Soap, in powder	1 ounce	,,	8 parts
Volatile Oil of Nutmeg	1 fluid drachm	,,	1 fl. part
Confection of Roses	1 ounce	,,	8 parts

Beat all together, until thoroughly mixed.

Dose.—5 to 10 grains.

PILULA ASAFŒTIDÆ COMPOSITA.

Compound Pill of Asafœtida.

1 in 4.

Synonym.—Pilula Galbani Composita.

It is preferable to reduce the resins to powder whilst keeping cold, + mass with glycerine in a warm mortar.

Take of

Asafœtida Galbanum Myrrh	of each	2 ounces	or	2 parts
Treacle		1 ounce	,,	1 part

Heat all together by means of a water-bath, and stir the mass until it assumes a uniform consistence.

Dose.—5 to 10 grains.

PILULA CAMBOGIÆ COMPOSITA.

Compound Pill of Gamboge.

About 1-6

Take of

Gamboge, in powder	1 ounce	or	1 part
Barbadoes Aloes, in powder	1 ounce	,,	1 part
Compound Powder of Cinnamon	1 ounce	,,	1 part
Hard Soap, in powder	2 ounces	,,	2 parts
Syrup	a sufficiency		

Glyc. of Trag preferable as excipient

Mix the powders together, add the syrup, and beat the whole into a uniform mass.

Dose.—5 to 10 grains.

1 Pilo pro pil = 12 pil

Gregory's Pill

Readily disting:d from Ext: Col: Co: by its odour

PILULA COLOCYNTHIDIS COMPOSITA.

Compound Pill of Colocynth.

1 in 6 nearly.

Take of

Colocynth Pulp, in powder	1 ounce	or 4 parts
Barbadoes Aloes, in powder	2 ounces	,, 8 parts
Resin of Scammony, in powder	2 ounces	,, 8 parts
Sulphate of Potassium, in powder	¼ ounce	,, 1 part
Oil of Cloves	2 fl. drachms	,, 1 fl. part
Distilled Water	a sufficiency	

– 1- 3 nearly.

Mucilag: Trag: preferable.

Mix the powders, add the oil of cloves, and beat into a mass with the aid of the water.

Dose.—5 to 10 grains.

PILULA COLOCYNTHIDIS ET HYOSCYAMI.

Pill of Colocynth and Henbane.

(1 of colocynth in 8½ nearly)

Take of

Compound Pill of Colocynth	2 ounces	or 2 parts
Extract of Henbane	1 ounce	,, 1 part

Beat them into a uniform mass.

Dose.—5 to 10 grains.

PILULA CONII COMPOSITA.

Compound Pill of Hemlock.

Take of

Extract of Hemlock	2½ ounces	or 5 parts
Ipecacuanha, in powder	½ ounce	,, 1 part
Treacle	a sufficiency	

Excipient unnecessary.

Mix the extract of hemlock and ipecacuanha, and add sufficient treacle to form a pill-mass.

Dose.—5 to 10 grains.

PILULA FERRI CARBONATIS.

Pill of Carbonate of Iron.

1 in $1\frac{1}{4}$

Take of

Saccharated Carbonate of Iron	1 ounce	. . or . .	4 parts
Confection of Roses . .	$\frac{1}{4}$ ounce	. . ,, . .	1 part

Beat them into a uniform mass.

Dose.—5 to 20 grains.

To insure complete combination of the I, when the action appears to be completed apply a gentle heat for ½ a minute. If there is any free Iodine it will be indicated when the licorice is added, ∴ drug containing starch the mass will go almost black.

PILULA FERRI IODIDI.

Pill of Iodide of Iron.

1 of FeI_2 in $3\frac{1}{2}$ = 28% nearly.

Take of

Fine Iron Wire . .	40 grains	. . or .	40 parts
Iodine	80 grains	. . ,, .	80 parts
Refined Sugar, in powder	70 grains	. . ,, .	70 parts
Liquorice Root, in powder	140 grains	. ,, .	140 parts
Distilled Water . .	50 minims	. ,, .	46 fluid parts

Agitate the iron with the iodine and the water in a strong stoppered ounce phial, until the froth becomes white. Pour the fluid upon the sugar in a mortar, triturate briskly, and gradually add the liquorice. $Fe_2 + 2I_2 = 2FeI_2$.

Dose.—3 to 8 grains.

The Hg exists in this pill principally as metal in a fine state of division + to a small extent as oxides formed by the Hg being so finely divided.

PILULA HYDRARGYRI.

Mercurial Pill.

Synonym.—Blue Pill.

1 of Hg in 3.

Take of

Mercury, by weight . .	2 ounces	. . or . .	2 parts
Confection of Roses . .	3 ounces	. . ,, . .	3 parts
Liquorice Root, in fine powder	1 ounce	. . ,, . .	1 part

Rub the mercury with the confection of roses until metallic globules are no longer visible, then add the liquorice, and mix the whole well together.

Dose.—3 to 8 grains.

PILULA HYDRARGYRI SUBCHLORIDI COMPOSITA.

Compound Pill of Subchloride of Mercury. about 1-5.

Synonym.—Pilula Calomelanos Composita.

Take of

pulv
il =
P.H.S.C.

Subchloride of Mercury .	1 ounce . . . or	. 1 part
Sulphurated Antimony .	1 ounce . . . ,,	. 1 part
Guaiacum Resin, in powder	2 ounces . . ,,	. 2 parts
Castor Oil . . .	1 fl. oz. or a sufficiency ,,	. 1 fl. part or a sufficiency

Preferably
Muc Acac $\frac{2}{3}$.
Glycer $\frac{1}{3}$.

Triturate the subchloride of mercury with the antimony, then add the guaiacum resin and castor oil, and beat the whole into a uniform mass. The pill is liable to decompose by long keeping with formation of $SbCl_3$ + sulphide of Hg.

Dose.—5 to 10 grains.

PILULA IPECACUANHÆ CUM SCILLA.

Pill of Ipecacuanha with Squill. 1 opium in 23.

Take of

Compound Powder of Ipecacuanha	3 ounces . . or	. 3 parts
Squill, in powder . . .	1 ounce . . . ,,	. 1 part
Ammoniacum, in powder . .	1 ounce . . . ,,	. 1 part
Treacle	a sufficiency	

Mix the powders, and beat into a mass with the treacle.

Dose.—5 to 10 grains.

PILULA PHOSPHORI.

Phosphorus Pill.

Take of

Phosphorus	3 grains
Balsam of Tolu	120 grains
Yellow Wax	57 grains
Curd Soap	90 grains

Cut the P. small under water.

Put the phosphorus and balsam of tolu into a mortar about half full of hot water, and when the phosphorus has

The final product must be quite free from particles of wax, ∴ avoid which have a little hot water at hand, + add a little occasionally to maintain the temperature of the water in the mortar.

melted and the balsam has become sufficiently soft, rub them together beneath the surface of the water until no particles of phosphorus are visible, the temperature of the water being maintained at or near to 140° F. (60° C.) Add now the wax, and as it softens mix it thoroughly with the other ingredients. Allow the mass to cool without being exposed to the air, and keep it immersed in cold water in a bottle.

When dispensed, every two grains of the product is to be incorporated with one grain of the soap; a few drops of rectified spirit being used, if necessary, to soften the whole.

Three grains of the mass so produced, including the soap, will contain $\frac{1}{30}$th of a grain of phosphorus.

Dose.—2 to 4 grains.

PILULA PLUMBI CUM OPIO.

Pill of Lead and Opium.

1 of opium in 8

Take of

Acetate of Lead, in fine powder	36 grains	or	6 parts
Opium, in powder	6 grains	,,	1 part
Confection of Roses	6 grains	,,	1 part

Beat them into a uniform mass.

Dose.—3 to 5 grains.

Mecomate of lead + acetate of morphia are formed. The pill has an odour of acetic acid due to the colouring matter of the drugs combining with Pb + liberating the acid.

PILULA RHEI COMPOSITA.

2 Pulv pro P
= 3 Pil Rh

Compound Rhubarb Pill.

About 1 – 4.

Take of

Rhubarb Root, in powder	3 ounces	or	6 parts	
Socotrine Aloes, in powder	$2\frac{1}{4}$ ounces	,,	$4\frac{1}{2}$ parts	
Myrrh, in powder	$1\frac{1}{2}$ ounce	,,	3 parts	
Hard Soap, in powder	$1\frac{1}{2}$ ounce	,,	3 parts	
Oil of Peppermint	$1\frac{1}{2}$ fl. drachm	,,	$\frac{1}{3}$ part	
Glycerine	1 ounce	,,	2 parts	$1\frac{1}{2}$ } suff
Treacle	about 3 ozs.	,,	6 parts	$4\frac{1}{2}$ }

Mix the powders with the oil, then add the glycerine and sufficient treacle, and beat the whole into a uniform mass.

Dose.—5 to 10 grains.

The only B.P. prep: in which powdered myrrh is ordered.

Has a strong odour of peppermint.

PILULA SAPONIS COMPOSITA.

Compound Pill of Soap.

Synonym.—Pilula Opii. 1 – 6 of opium nearly.

Take of

Opium, in powder	½ ounce	or	1 part
Hard Soap, in powder	2 ounces	,,	4 parts
Glycerine			a sufficiency

Mix the opium and soap, and beat into a uniform mass with the glycerine.

Dose.—3 to 5 grains.

PILULA SCAMMONII COMPOSITA.

Compound Scammony Pill.

(1 of Scam: Res: in 3¼)

Take of

Resin of Scammony	1 ounce	or	1 part
Resin of Jalap	1 ounce	,,	1 part
Curd Soap, in powder	1 ounce	,,	1 part
Strong Tincture of Ginger	1 fl. ounce	,,	1 fl. part
Rectified Spirit	2 fl. ounces	,,	2 fl. parts

Add the spirit and tincture to the soap and resins, and dissolve with the aid of a little heat; then evaporate the spirit by the heat of a water-bath until the mass has acquired a suitable consistence for forming pills.

Dose.—5 to 15 grains.

PILULA SCILLÆ COMPOSITA.

Compound Squill Pill.

1 in 5.

Take of

Squill, in powder	1¼ ounce	or	1¼ part
Ginger, in powder	1 ounce	,,	1 part
Ammoniacum, in powder	1 ounce	,,	1 part
Hard Soap, in powder	1 ounce	,,	1 part
Treacle	2 ozs., or a sufficiency	,,	2 parts, or a sufficiency

Mix the powders, add the treacle, and beat into a uniform mass.

Dose.—5 to 10 grains.

PIMENTA.

Pimento.

N.O. Myrtaceæ.

The dried unripe full-grown fruit of Pimenta officinalis, *Lindl.* (Eugenia Pimenta, *DC.*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 111. Tropical America

Characters.—Dry, light, roundish, one-fifth of an inch or more in diameter, and crowned with the remains of the calyx in the form commonly of a raised scar-like ring; pericarp roughish from the presence of oil-glands, brittle, dark-brown, two-celled, each cell containing a brownish-black somewhat compressed reniform seed. Odour and taste warm, aromatic, and peculiar, but resembling cloves.

Preparations.

Aqua Pimentæ	14 ounces to 1 gallon
Oleum Pimentæ	

P.C. 3-4% vol: oil Resin fat tannin.

PIPER NIGRUM.

Black Pepper.

N.O. Piperaceæ.

The dried unripe fruit of Piper nigrum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 245. Indigenous to India. Largely c in Java Borneo Sumatra Phili + West Indian islands.

Characters.—Roundish, usually about one-fifth of an inch in diameter; pericarp thin, blackish-brown, wrinkled, and containing a hard smooth roundish seed of a yellowish-brown or grey colour. Odour aromatic; taste pungent and bitterish.

Preparations.

Confectio Opii	1 part in 31
,, Piperis	1 part in 10
Pulvis Opii Compositus	1 part in 7½

P.C. Contains 4-9% of an alkaloid piperine, with a volatile oil + an acrid resin. About 5% ash on incinerati

PIX BURGUNDICA.

Burgundy Pitch.

The resinous exudation obtained from the stem of Pinus Picea, *Du Roi* (Pinus Abies, *Linn.*; Abies excelsa, *DC.*); *Lamb. Ill. Gen. Pinus*, 2nd ed. plate 27; melted and strained. The Norway Spruce Fir is indigenous to C + N. Europe The pitch is collected in Switzerland Germany Austria + Finland.

Characters and Test.—Hard and brittle, yet gradually taking the form of the vessel in which it is kept; somewhat opaque, dull reddish-brown or yellowish-brown, fracture clear and conchoidal. Odour agreeable and aromatic, especially when heated; taste sweet, aromatic, without bitterness. Readily soluble in glacial acetic acid. Never met with in English commerce.

Preparations.

Emplastrum Ferri . . .	2 parts in 11
" Picis . . .	1 part in 2, nearly

P.C. Essential oil isomeric with terebinthinene + a resin which consists principally of abietic acid.

PIX LIQUIDA.

Tar.

Barbadoes Tar + Rangoon Tar are petroleum oils.

A bituminous liquid, obtained from the wood of Pinus sylvestris, *Linn.*, and other species of Pinus, by destructive distillation. Russia Finland + Sweden.

Characters.—A dark-brown or blackish semi-liquid substance, of a well-known peculiar aromatic odour. Water agitated with it acquires a pale-brown colour, sharp empyreumatic taste, and acid reaction.

Preparation.—Unguentum Picis Liquidæ.

P.C. Pyrocatechin in large amount, with hydrocarbons, acids phenols + paraffins.

PLUMBI ACETAS.

Acetate of Lead.

$Pb(C_2H_3O_2)_2,3H_2O$. Sugar of Lead.

It may be obtained by the following process:—

Take of

Oxide of Lead, in fine powder	24 ounces
Acetic Acid	2 pints, or a sufficiency
Distilled Water . . .	1 pint

Mix the acetic acid and the water, add the oxide of lead, and dissolve with the aid of a little heat. Filter, evaporate till a pellicle forms, and set aside to crystallise, first adding a little acetic acid should the fluid not have a distinctly acid reaction. Drain and dry the crystals on filtering paper, without heat. $PbO + 2HC_2H_3O_2 = Pb(C_2H_3O_2)_2 + H_2O$.

Characters and Tests.—In white crystalline masses, slightly efflorescent, having an acetous odour, and a sweet astringent taste. Its solution in water slightly reddens litmus, gives a yellow precipitate with iodide of potassium, and is precipitated white by sulphuric acid, acetic acid being set free. Its solution in distilled water is clear, or has only a slight milkiness, which disappears on the addition of acetic acid. Thirty-eight grains dissolved in water requires for complete precipitation 200 grain-measures of the volumetric solution of oxalic acid.

Used as a test for sodii Arsenias.

Dose.—1 to 4 grains. $1 c.c. \frac{N}{2}$ ox $= \cdot 1895$ gr $Pb(C_2H_3O_2)_2$

Preparations in which Acetate of Lead is used.

Glycerinum Plumbi Subacetatis	
Liquor Plumbi Subacetatis . . .	5 ounces to 1 pint
Pilula Plumbi cum Opio . . .	3 parts in 4
Suppositoria Plumbi Composita . .	3 grains in each, or 1 part in 5
Unguentum Plumbi Acetatis . .	1 part in 38

Also used in preparing alkaloid, Strychnia.

White lead of commerce is a mixture of carbonate + hydrate in variable proportions, its normal composition being $2PbCO_3 \cdot PbO_2H_2$

PLUMBI CARBONAS.

Carbonate of Lead.

Characters and Tests.—A soft heavy white powder, blackened by sulphuretted hydrogen, insoluble in water, soluble with effervescence in diluted acetic acid without leaving any residue, and forming a solution which is precipitated white by

Absen- Pb silica

Dutch Process:- by placing rolls of sheet lead in earthenware crucible shaped vess are exposed to the action of acetic fumes + the vapours arising from fermenting The basic acetate formed is converted into carbonate by the CO_2 from the decompos organic matter. The acetic acid thus set free again acts upon the metal until whole is converted into carbonate. In Germany thin plates of lead are suspended in chambers containing the vapours of acetic acid + water subsequently introducing CO_2 + air. In the quick process lithar is suspended in a solution of lead nitrate or acetate + treated with CO_2.

sulphuric acid, and yellow by iodide of potassium. The acetic solution when treated with excess of sulphuretted hydrogen, boiled and filtered, gives no precipitate with oxalate of ammonium. Absence of Calcium.

Preparation.

Unguentum Plumbi Carbonatis	1 part in 8

PLUMBI IODIDUM.

Iodide of Lead.

PbI_2.

Take of

Nitrate of Lead	of each	4 ounces
Iodide of Potassium	of each	4 ounces
Distilled Water		a sufficiency

Dissolve the nitrate of lead, by the aid of heat, in a pint and a half, and the iodide of potassium in half a pint of the water, and mix the solutions. Collect the precipitate on a filter, wash it with distilled water, and dry it in a warm place.

$Pb(NO_3)_2 + 2KI = PbI_2 + 2KNO_3$

Preparations.

Emplastrum Plumbi Iodidi	1 part in 10
Unguentum Plumbi Iodidi	1 part in 8

PLUMBI NITRAS.

Nitrate of Lead.

$Pb(NO_3)_2$.

Characters and Tests.—In colourless octahedral crystals which are nearly opaque, permanent in the air, of a sweetish astringent taste, soluble in water and in alcohol. The aqueous solution is precipitated black by sulphuretted hydrogen, white by diluted sulphuric acid, and yellow by iodide of potassium. Added to sulphate of indigo it discharges the colour.

Preparation for which Nitrate of Lead is used.

Plumbi Iodidum

Prepared by dissolving litharge in nitric acid.

$PbO + 2HNO_3 = Pb(NO_3)_2 + H_2O$.

Evaporated to dryness to remove excess of HNO_3

Dissolved in hot water + solution allowed to crystallize.

Litharge is obtained by the cupellation of lead at a high temp: The melted litharge flows from the cupel into iron pots where it slowly cools The mass when cool breaks up into crystalline scales. This constitutes Flake Litharge. Ground between stones under water forms levigated Litharge.

PLUMBI OXIDUM.

Oxide of Lead.

Synonym.—Litharge.

PbO.

Characters and Tests.—In heavy scales of a pale brick-red colour, completely soluble without effervescence in diluted nitric and acetic acids, and each solution, when neutral, giving a copious yellow precipitate with iodide of potassium. Its solution in diluted nitric acid, when supersaturated with ammonia and then cleared by filtration, does not exhibit a blue colour.

absence of Cu.

Preparations for which Oxide of Lead is used.

Emplastrum Plumbi
,, Saponis Fuscum
Liquor Plumbi Subacetatis
Plumbi Acetas
Glycerinum Plumbi Subacetatis

Used as a test for Ac: Phosph: Conc: + Dil:

Preparations containing Lead.

Emplastrum Belladonnæ
,, Calefaciens
,, Ferri
,, Galbani
,, Hydrargyri
,, Opii
,, Plumbi
,, ,, Iodidi
,, Resinæ
,, Saponis
,, ,, Fuscum
Glycerinum Plumbi Subacetatis
Liquor Plumbi Subacetatis
Liquor Plumbi Subacetatis Dilutus
Pilula Plumbi cum Opio
Plumbi Acetas
,, Carbonas
,, Iodidum
,, Nitras
Suppositoria Plumbi Composita
Unguentum Glycerini Plumbi Subacetatis
,, Plumbi Acetatis
,, ,, Carbonatis
,, ,, Iodidi

PODOPHYLLI RHIZOMA.

Podophyllum Rhizome.

N.O. Berberideæ.

Synonym.—Podophylli Radix.

The dried rhizome and rootlets of Podophyllum peltatum, *Linn.*; *Bot. Mag.* plate 1819. N. America in rich woods + thickets.

Characters.—In pieces of variable length, and from about one-fifth to one-third of an inch thick; flattened-cylindrical, presenting at varying intervals large irregular tuberosities, which are marked above by a depressed circular scar, and giving off below a variable number of very brittle brownish rootlets or, if these are broken off, presenting a corresponding number of whitish scars; dark reddish-brown or reddish-yellow; smooth or somewhat wrinkled; breaking with a short fracture, internally whitish and mealy. Odour faintly narcotic; taste bitterish, acrid, and nauseous. P.C. Resin 4-5%; starch, sugar.

Preparation.—Podophylli Resina.

PODOPHYLLI RESINA.

Resin of Podophyllum.

Take of

Podophyllum Rhizome, in No. 40 powder	1 pound
Rectified Spirit	3 pints, or a sufficiency
Distilled Water	a sufficiency

Exhaust the podophyllum with the spirit by percolation; place the tincture in a still, and draw off the greater part of the spirit. Slowly pour the liquor which remains after the distillation of the tincture into three times its volume of the water, constantly stirring. Allow the mixture to stand for twenty-four hours to deposit the resin. Wash the resin on a filter with distilled water, and dry it in a stove.

Characters.—An amorphous powder, varying in colour from pale yellow to deep orange-brown; soluble in rectified spirit and in ammonia; precipitated from the former solution by water, from the latter by acids. Partly soluble in pure ether.

Dose.—$\frac{1}{4}$ to 1 grain.

Preparation.

Tinctura Podophylli . . 1 grain in 1 fluid drachm

F.C. Podophyllotoxin, podophylloquercetin
Podophyllinic acid + crystalline fatty acid.

POTASSA CAUSTICA.

Caustic Potash.

Synonyms.—Potassæ Hydras; Potassa; Hydrate of Potash.

Hydrate of potassium, KHO, containing some impurities.

Take of
Solution of Potash . . . . . 2 pints

Boil down the solution of potash rapidly in a clean silver vessel, until there remains a clear fluid of oily consistence, a drop of which when removed on a warm glass rod solidifies on cooling. Pour this into proper moulds, and when it has solidified, and while it is still warm, put it into stoppered bottles.

Characters and Tests.—In hard white pencils or cakes, very deliquescent, powerfully alkaline and corrosive. A watery solution acidulated by nitric acid gives a yellow precipitate with perchloride of platinum, and only scanty white precipitates with nitrate of silver and chloride of barium. Fifty-six grains dissolved in water leaves only a trace of sediment, and requires for neutralisation at least 900 grain-measures of the volumetric solution of oxalic acid. 1 c.c. $\frac{N}{2}$ $H_2C_2O_4$ = ·056 grm of KOH. 90-100 %

Preparation containing Caustic Potash.

Liquor Potassæ . . 27 grains in 1 fluid ounce

Preparation for which Caustic Potash is used.

Potassii Permanganas

Pot: Nit: is added to commercial KOH to bleach it. It is reduced in the fusion to KNO_2 + may be detected by adding to an aqueous solution sol: KI + excess of H_2SO_4 a brown colour (free I) is produced.

Preparations containing Potassium or its Compounds.

Antimonium Tartaratum
Argenti et Potassii Nitras
Confectio Sulphuris
Decoctum Aloes Compositum
Enema Aloes
Ferrum Tartaratum
Linimentum Iodi
,, Potassii Iodidi cum Sapone
,, Terebinthinæ
Liquor Arsenicalis
,, Iodi
,, Potassæ
,, ,, Effervescens
,, Potassii Permanganatis
Mistura Ferri Composita
Pilula Colocynthidis Composita
,, Colocynthidis et Hyoscyami
Pulvis Ipecacuanhæ Compositus
,, Jalapæ Compositus
Potassa Caustica
Potassa Sulphurata
Potassii Acetas
,, Bicarbonas
,, Bichromas
,, Bromidum
,, Carbonas
,, Chloras
,, Citras
,, Cyanidum
,, Ferrocyanidum
,, Iodidum
,, Nitras
,, Permanganas
,, Sulphas
,, Tartras
,, Tartras Acida
Sapo Mollis
Soda Tartarata
Trochisci Potassii Chloratis
Unguentum Antimonii Tartarati
,, Iodi
,, Potassæ Sulphuratæ
,, Potassii Iodidi
Vinum Antimoniale

POTASSA SULPHURATA.

Sulphurated Potash.

Synonyms.—Hepar Sulphuris; Potassii Sulphuretum.

A mixture of salts of potassium, of which the chief is sulphide.

Take of

Carbonate of Potassium, in powder . .	10 ounces
Sublimed Sulphur	5 ounces

$3K_2CO_3 + 4S_2 = 2K_2S_3 + K_2S_2O_3 + 3CO_2$.
Rapidly absorbs O, $K_2SO_3 + K_2SO_4$ being formed + ultimately becomes a useless, dirty mass of $K_2SO_4 + K_2S_2O_3$ with generally $K_2CO_3 + S$.

Mix the carbonate of potassium, dried, and the sulphur in a warm mortar, and, having introduced them into a Cornish or Hessian crucible, let this be heated, first gradually until effervescence has ceased, and finally to dull redness, so as to produce perfect fusion. Let the liquid contents of the crucible be then poured out on a clean flagstone, and covered quickly with an inverted porcelain basin so as to exclude currents of air while solidification is taking place. The solid product thus obtained should, when cold, be broken into fragments, and immediately enclosed in a green-glass bottle, furnished with an air-tight stopper.

Characters and Tests.—Solid greenish fragments, liver-brown when recently broken, alkaline, and acrid to the taste, readily forming with water a yellow solution, which has the odour of sulphuretted hydrogen and evolves it freely when excess of hydrochloric acid is dropped into it, sulphur being at the same time deposited. The acid fluid when boiled and filtered is precipitated yellow by perchloride of platinum, and white by chloride of barium. About 50 per cent. of sulphurated potash is dissolved by rectified spirit.

Absence of excess of K_2CO_3 or K_2SO_4.

Preparation.—Unguentum Potassæ Sulphuratæ.

POTASSII ACETAS.

Acetate of Potassium.

Synonyms.—Potassæ Acetas; Acetate of Potash.

$KC_2H_3O_2$.

Take of

Carbonate of Potassium . .	20 ounces
Acetic Acid	2 pints, or a sufficiency

To the acetic acid add gradually the carbonate of potassium, filter; acidulate, if necessary, with a few additional drops of the acid, and, having evaporated the liquid to dryness in a thin porcelain basin, raise the heat cautiously so as to liquefy the product. Allow the basin to cool, and when the salt has solidified, and while it is still warm, break it into fragments and put it into stoppered bottles.

$2HC_2H_3O_2 + K_2CO_3 = 2KC_2H_3O_2 + H_2O + CO_2$.

Characters and Tests.—White foliaceous satiny masses, very deliquescent, with a watery solution of which tartaric acid gives a crystalline precipitate, sulphuric acid causes the disengagement of acetic acid, and a dilute solution of perchloride of iron strikes a deep red colour. Neutral to test-paper, almost entirely soluble in rectified spirit. Its solution is unaffected by sulphydrate of ammonium. absence of Fe.

Dose.—10 to 60 grains.

POTASSII BICARBONAS.

Bicarbonate of Potassium.

Synonyms.—Potassæ Bicarbonas; Bicarbonate of Potash; Acid Carbonate of Potassium.

$KHCO_3$.

This salt may be obtained by saturating a strong aqueous solution of carbonate of potassium with carbonic acid gas, and recrystallising the separated salt.

Characters and Tests.—Colourless right rhombic prisms, not deliquescent, of a saline feebly alkaline taste, not corrosive. Diluted hydrochloric acid causes strong effervescence, forming a solution with which perchloride of platinum gives a yellow precipitate. Fifty grains exposed to a low red heat leave thirty-four and a half grains of a white residue, which requires for exact saturation 500 grain-measures of the volumetric solution of oxalic acid. 1 c.c. $\frac{N}{2}$ $H_2C_2O_4$ = ·1 grm $KHCO_3$.

20 grains of Bicarbonate of Potassium } neutralise { 14 grains Citric Acid, or 15 grains Tartaric Acid

Dose.—10 to 40 grains. $K_2CO_3 + H_2O + CO_2 = 2KHCO_3$.

Preparation containing Bicarbonate of Potassium.

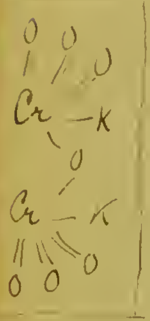
Liquor Potassæ Effervescens . 30 grains in 1 pint

Potass Bichrom. is made on a large scale by roasting a mixture of finely powdere chrome iron stone with K_2CO_3 + CaO in a reverberatory furnace. The addition of CaO necessary to prevent the mass fusing as in that case the heavy chrome ore would to the bottom + would be very slowly acted upon. The roasted mass is lixi with water + treated with K_2SO_4 in order to decompose the $CaCrO_4$. The solution is allowed to clarify by standing + is mixed with H_2SO_4.

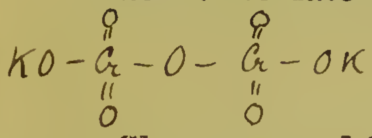
The greater portion of the $K_2Cr_2O_7$ rapidly separates out + is purified by recryst:. The mother liquors containing the K_2SO_4 are employed in the treatment of fresh roasted ore.

POTASSII BICHROMAS.

Bichromate of Potassium.



Synonyms.—Potassæ Bichromas; Bichromate of Potash; Red Chromate of Potassium; Anhydrochromate of Potassium.



$KO-\overset{\overset{O}{\|}}{\underset{\underset{O}{\|}}{Cr}}-O-\overset{\overset{O}{\|}}{\underset{\underset{O}{\|}}{Cr}}-OK$

K_2CrO_4,CrO_3.

Characters and Tests.—In large red transparent four-sided tables; anhydrous; fuses below redness; at a higher temperature is decomposed, yielding green oxide of chromium and yellow chromate of potassium, which may be separated by dissolving the latter in water. The bichromate dissolved in water gives a yellowish-white precipitate with chloride of barium, and a purplish-red precipitate with nitrate of silver, and both these precipitates are soluble in diluted nitric acid. The aqueous solution digested with sulphuric acid and rectified spirit acquires an emerald-green colour.

Preparations for which Bichromate of Potassium is used.

Acidum Chromicum | Sodii Valerianas

$2FeOCr_2O_3 + 3K_2CO_3 + CaO + 7O = 3K_2CrO_4 + CaCrO_4 + Fe_2O_3 + 3CO_2$.

$CaCrO_4 + K_2SO_4 = K_2CrO_4 + CaSO_4$ $2K_2CrO_4 + H_2SO_4 = K_2Cr_2O_7 + K_2SO_4 +$

POTASSII BROMIDUM.

Bromide of Potassium.

KBr.

May be obtained by the following process:—

Take of

Solution of Potash . . .	2 pints
Bromine	4 ounces, or a sufficiency
Wood Charcoal, in fine powder .	2 ounces
Boiling Distilled Water .	$1\frac{1}{2}$ pint

Put the solution of potash into a glass or porcelain vessel, and add bromine in successive portions, with constant agitation, until the mixture has acquired a permanent brown tint.

$6KOH + 3Br_2 = 5KBr + KBrO_3 + 3H_2O$.

$KBrO_3 + 3C = KBr + 3CO$.

he commercial KBr + KI always contain a trace of $KBrO_3$ + KIO_3 respect-
ly. The very last traces may be removed by dissolving the salt in
ter + generating nascent H by means of a Zn + Cu couple.

Evaporate to dryness; reduce the residue to a fine powder, and mix this intimately with the charcoal. Throw the mixture, in small quantities at a time, into a red-hot iron crucible, and when the whole has been brought to a state of fusion, remove the crucible from the fire and pour out its contents. When the fused mass has cooled, dissolve it in the water, filter the solution through paper, and set it aside to crystallise. Drain the crystals, and dry them in a warm place. More crystals may be obtained by evaporating the mother liquor and cooling. The salt should be kept in a stoppered bottle.

nce of Br.

Characters and Tests.—In colourless cubical crystals, with no odour, but a pungent saline taste, readily soluble in water, less soluble in spirit. Its aqueous solution gives a white crystalline precipitate with tartaric acid. When its solution in water is mixed with a little chlorine, chloroform agitated with it, on falling to the bottom, exhibits a red colour. Ten grains requires for complete decomposition not less than 838 nor more than 850 grain-measures of the volumetric solution of nitrate of silver. A solution of the salt mixed with mucilage of starch and a drop of an aqueous solution of bromine or chlorine, does not exhibit any blue colour. The solution gives only a slight opacity with saccharated solution of lime or with solution of nitrate of barium, and diluted sulphuric acid causes no immediate yellow coloration.

1 c.c. $\frac{N}{10}$ $AgNO_3$ = ·0119 grm KBr.

Absence of carbonates.

absence of bromates.

Dose.—5 to 30 grains.

POTASSII CARBONAS.

Carbonate of Potassium.

Obtained pure by ignition of $KHCO_3$.

Synonyms.—Potassæ Carbonas; Carbonate of Potash.

K_2CO_3 with about 16 per cent. of water of crystallisation.

4-5% usually.

Obtained from commercial pearl-ash, the product of lixiviation of wood-ashes, by treating the pearl-ash with its own weight of distilled water, and evaporating the solution so formed just to dryness while it is kept briskly agitated.

Characters and Tests.—A white crystalline powder, alkaline and caustic to the taste, very deliquescent, readily soluble in water but insoluble in spirit, effervescing with diluted hydrochloric acid, and forming a solution with which perchloride of platinum gives a yellow precipitate. Loses about sixteen per cent. of its weight when exposed to a red heat. When supersaturated with nitric acid and evaporated to dryness, the residue is almost entirely soluble in water, only a little silica remaining undissolved; and the solution is precipitated only faintly by chloride of barium or nitrate of silver. Eighty-three grains requires for neutralisation at least 980 grain-measures of the volumetric solution of oxalic acid.

Hence used to
remove water
from S.V.R.

= 84% K_2CO_3

20 grains of Carbonate of Potassium } neutralise { 17 grains Citric Acid, or 18 grains Tartaric Acid

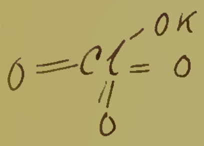
$\left.\begin{matrix}1\text{ c.c.}\\ \frac{N}{2}\text{ Ox}\end{matrix}\right\} = \cdot 069$ grm K_2CO_3

Dose.—10 to 30 grains.

Preparations for which Carbonate of Potassium is used.

Atropina
Decoctum Aloes Compositum
Enema Aloes
Liquor Arsenicalis
,, Potassæ
Mistura Ferri Composita
Potassa Sulphurata
Potassii Acetas
,, Bicarbonas
,, Chloras
,, Citras
,, Ferrocyanidum
,, Tartras

$(KClO_4)$



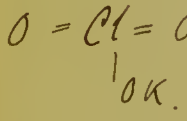
$O{=}Cl({=}O)({=}O){-}OK$

POTASSII CHLORAS.

Chlorate of Potassium.

Synonyms.—Potassæ Chloras; Chlorate of Potash.

$KClO_3$.



$O{=}Cl({=}O){-}OK$.

May be obtained by the following process:—

Take of

Carbonate of Potassium . . .	20 ounces
Slaked Lime	53 ounces
Distilled Water	a sufficiency
Black Oxide of Manganese . . .	80 ounces
Hydrochloric Acid	24 pints

$6\,Ca(OH)_2 + 6\,Cl_2 = 3(CaCl_2 \cdot CaCl_2O_2) + 6\,H_2O$

On boiling $3(CaCl_2 \cdot CaCl_2O_2) = Ca\,2ClO_3 + 5\,CaCl_2$

$Ca\,2ClO_3 + K_2CO_3 = 2\,KClO_3 + CaCO_3$.

hlorine passed into a mixture of $Ca(OH)_2$ and water until clear,
mp being maintained at 80°C Sol of KCl is added + on
ooling Potassii Chloras crystallizes out.

Mix the lime with the carbonate of potassium, and triturate them with a few ounces of the water so as to make the mixture slightly moist. Place the oxide of manganese in a large retort or flask, and having poured upon it the hydrochloric acid, diluted with six pints of water, heat gently on a sand-bath, and conduct the chlorine as it comes over, first through a bottle containing six ounces of water, and then into a large carboy containing the mixture of carbonate of potassium and slaked lime. When the whole of the chlorine has come over, remove the contents of the carboy, and boil them for twenty minutes with seven pints of the water; filter and evaporate till a film forms on the surface, and set aside to cool and crystallise. The crystals thus obtained are to be purified by dissolving them in three times their weight of boiling distilled water and again allowing the solution to crystallise.

In place of carbonate of potassium, chloride may be used.

Characters and Tests.—In colourless rhomboidal crystalline plates, with a cool saline taste, sparingly soluble in cold water. It explodes when triturated with sulphur or sulphides. Its solution is not affected by nitrate of silver or oxalate of ammonium. By heat it fuses, gives off oxygen gas, and leaves ″ a white residue, readily forming with water a neutral solution,″ which is precipitated white by nitrate of silver, and yellow″ by perchloride of platinum.

Dose.—10 to 30 grains.

Preparations for which Chlorate of Potassium is used.

Potassii Permanganas	
Trochisci Potassii Chloratis	5 grains in each lozenge

POTASSII CITRAS.

Citrate of Potassium.

Synonyms.—Potassæ Citras; Citrate of Potash.

$K_3C_6H_5O_7$.

Take of

Carbonate of Potassium	8 ounces, or a sufficiency
Citric Acid, in crystals	6 ounces, or a sufficiency
Distilled Water	2 pints

Dissolve the citric acid in the water, add the carbonate of potassium gradually, and, if the solution be not neutral, make it so by the cautious addition of the acid or the carbonate of potassium. Then filter, and evaporate to dryness, stirring constantly after a pellicle has begun to form, till the salt granulates. Triturate in a dry warm mortar, and preserve the powder in stoppered bottles.

Characters and Tests.—A white powder of saline feebly acid taste, deliquescent, and very soluble in water. Heated with sulphuric acid it forms a brown fluid, gives off an inflammable gas, and evolves the odour of acetic acid. Its dilute solution, mixed with a solution of chloride of calcium, remains nearly clear till it is boiled, when a white precipitate separates, readily and almost entirely soluble in acetic acid. Its solution, acidulated with hydrochloric acid, gives a yellow precipitate with perchloride of platinum. 102 grains heated to redness till gases cease to be evolved leaves an alkaline residue, which when treated with distilled water, filtered, and well washed, yields a clear solution requiring for exact neutralisation 1000 grain-measures of the volumetric solution of oxalic acid.

Dose.—20 to 60 grains. 1 c.c. = ·102 grm $K_3C_6H_5O_7$

Pure by distilling HCN into KOH solution.

POTASSII CYANIDUM.

Cyanide of Potassium.

KCN.

Must be anhydrous or NH_3 will be formed.

May be obtained by heating ferrocyanide of potassium at a red heat until gas ceases to be evolved, allowing the sediment to subside in the still molten mass, and pouring off the clear fluid. It may be purified, if necessary, by solution in and crystallisation from spirit. S. Y. M.

Characters and Tests.—In white opaque deliquescent crystalline masses having the odour of hydrocyanic acid. It is readily soluble in water, and sparingly but almost entirely in

$4KCN \cdot Fe(CN)_2 = 4KCN + FeC_2 + N_2$.

As a portion of the cyanogen is lost by the above method K_2CO_3 is added in manufacturing the salt; the resulting KCN is then contaminated with KCNO.

$2(4KCN \cdot Fe(CN)_2) + 2K_2CO_3 = 10KCN + 2KCNO + Fe_2 + 2CO_2$

KCNO is treated with water :- $KCNO + 2H_2O = KHCO_3 + NH_3$.

absolute alcohol. The aqueous solution has an alkaline reaction; it yields no precipitate with ferrocyanide of potassium. The alcoholic solution gives no precipitate with chloride of barium. Ten grains dissolved in an ounce of distilled water requires about 730 grain-measures of volumetric solution of nitrate of silver to be added before a permanent precipitate begins to form, corresponding to about 95 per cent. of real cyanide of potassium. It is intensely poisonous. 1 c.c. $AgNO_3$ = ·013 grm KCN.

Absence of Fe.

Preparation for which Cyanide of Potassium is employed.

Bismuthum Purificatum

POTASSII FERROCYANIDUM.

Ferrocyanide of Potassium.

Synonyms.—Potassæ Prussias Flava; Yellow Prussiate of Potash.

$$K_4FeC_6N_6,3H_2O.$$

A salt obtained by fusing animal substances, such as the cuttings of horns, hoofs, and skins, with carbonate of potassium and iron, in an iron pot, lixiviating the crude product with water, and purifying the salt by crystallisation.

Characters and Tests.—In large yellow crystals, permanent in the air, soluble in water, insoluble in alcohol. The aqueous solution precipitates deep-blue with persulphate of iron, brick-red with sulphate of copper, and white with acetate of lead. Heated with diluted sulphuric acid, hydrocyanic acid vapours are evolved.

Preparations for which Ferrocyanide of Potassium is used.

Acidum Hydrocyanicum Dilutum
Potassii Cyanidum

$K_2CO_3 + 2C_2 + N_2 = 2KCN + 3CO$ by fusion
$6KCN + Fe + H_2O + O = K_4FeCy_6 + 2KOH.$

Tinct: Ferri: Perchlor: + all non-scaled ferric salts reduce KI immediately on mixing solutions. Free Iodine being pptd as a black sediment. Such mixtures are most dangerous + should not be dispensed. $Fe_2Cl_6 + 2KI = 2FeCl_2 + 2KCl + I_2$

POTASSII IODIDUM.

Iodide of Potassium.

KI.

May be obtained by the following process:—

Take of

Solution of Potash	1 gallon
Iodine	21 ounces, or a sufficiency
Wood Charcoal, in fine powder	3 ounces
Boiling Distilled Water	a sufficiency

Put the solution of potash into a glass or porcelain vessel, and add iodine in small quantities at a time with constant agitation, until the solution acquires a permanent brown tint. Evaporate the whole to dryness in a porcelain dish, pulverise the residue, and mix this intimately with the charcoal. Throw the mixture, in small quantities at a time, into a red-hot iron crucible, and, when the whole has been brought to a state of fusion, remove the crucible from the fire and pour out its contents. When the fused mass has cooled, dissolve it in two pints of boiling distilled water, filter through paper, wash the filter with a little boiling distilled water, unite the liquids, and evaporate the whole till a film forms on the surface. Set it aside to cool and crystallise. Drain the crystals, and dry them quickly in a warm place. More crystals may be obtained by evaporating the mother liquor and cooling. The salt should be kept in a stoppered bottle.

Characters and Tests.—In colourless, generally opaque, cubic crystals, readily soluble in water, and in a less degree in spirit. It commonly has a feeble alkaline reaction; its solution mixed with mucilage of starch gives a blue colour on the addition of a minute quantity of solution of chlorine. It gives a crystalline precipitate with tartaric acid. The addition of tartaric acid and mucilage of starch to its watery solution does not develope a blue colour. Solution of nitrate of silver added

absence of KIO_3

$$6KOH + 3I_2 = 5KI + KIO_3 + 3H_2O.$$

$$KIO_3 + 3C = KI + 3CO.$$

in excess forms a yellowish-white precipitate, which, when agitated with ammonia, yields by subsidence a clear liquid in which excess of nitric acid causes very little turbidity. Its aqueous solution is only faintly precipitated by the addition of saccharated solution of lime. Ten grains requires for complete precipitation about 602 grain-measures of the volumetric solution of nitrate of silver. 1cc. $\frac{N}{10}$ $AgNO_3$ = ·0166 grm KI.

absence of carbonates.

99%

Dose.—2 to 20 grains.

Preparations containing Iodide of Potassium.

Linimentum Iodi .	22 grains in 1 fluid ounce, nearly
,, Potassii Iodidi cum Sapone	54½ grains in 1 fluid ounce, nearly
Liquor Iodi . .	33 grains in 1 fluid ounce
Tinctura Iodi . .	11 grains in 1 fluid ounce, nearly
Unguentum Iodi .	14 grains in 1 ounce, nearly
,, Potassii Iodidi . . .	1 part in 8¾, nearly

POTASSII NITRAS.

Nitrate of Potassium.

Synonyms.—Potassæ Nitras; Nitrate of Potash.

KNO_3.

Nitrate of potassium of commerce, purified, if necessary, by crystallisation from solution in distilled water.

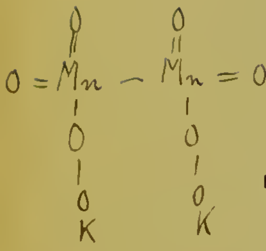
Characters and Tests.—In white crystalline masses or fragments of striated six-sided prisms, colourless, of a peculiar cool saline taste. Thrown on the fire it deflagrates; warmed in a test-tube with sulphuric acid and copper wire it evolves ruddy fumes. Its solution acidulated with hydrochloric acid gives a yellow precipitate with perchloride of platinum. Its solution is not affected by chloride of barium or nitrate of silver.

Dose.—10 to 30 grains.

Preparation.—Argenti et Potassii Nitras.

POTASSII PERMANGANAS.

Permanganate of Potassium.



Synonyms.—Potassæ Permanganas; Permanganate of Potash.

$(KMnO_4.)_2$.

Take of

Caustic Potash	5 ounces
Black Oxide of Manganese, in fine powder	4 ounces
Chlorate of Potassium	$3\frac{1}{2}$ ounces
Distilled Water	$2\frac{1}{2}$ pints
Carbonic Acid	a sufficiency

Reduce the chlorate of potassium to fine powder, and mix it with the oxide of manganese; put the mixture into a porcelain basin, and add to it the caustic potash, previously dissolved in four ounces of the water. Evaporate to dryness on a sand-bath, stirring diligently to prevent spurting. Pulverise the residual mass, and place the powder in a covered crucible, exposing it to a dull red heat for an hour, or until it has assumed a semifused condition. Let it cool, pulverise it, and boil with a pint and a half of the water. Let the insoluble matter subside, decant the fluid, boil again with half a pint of the water, again decant, saturate the united liquors with carbonic acid, and evaporate till a pellicle forms. Set aside to cool and crystallise. Drain the crystalline mass, boil it in six ounces of the water, and strain through a funnel the throat of which is lightly obstructed by a little asbestos. Let the fluid cool and crystallise, drain the crystals and dry them by placing them under a bell-jar over a vessel containing sulphuric acid.

The sol. would organic media,

Characters and Tests.—Dark purple slender prismatic crystals, inodorous, with a sweet astringent taste, soluble in water. A single small crystal suffices to form with an ounce of water a rich purple solution, which, when mixed with a little recti-

$$6KOH + KClO_3 + 3MnO_2 = 3K_2MnO_4 + KCl + 3H_2O$$

$$3K_2MnO_4 + 2H_2O = K_2Mn_2O_8 + 4KOH + MnO_2.$$

As a portion of the Mn is lost by boiling it has been recommend to pass Cl: into the aq: solution until the green colour becomes pur

$$2K_2MnO_4 + Cl_2 = K_2Mn_2O_8 + 2KCl.$$

$K_2Mn_2O_8 = K_2O + 2MnO + 5O.$

fied spirit and heated, becomes yellowish-brown. The crystals heated to redness decrepitate, evolve oxygen gas, and leave a black residue, from which water extracts potash, recognised by its alkaline reaction, and by its giving, when acidulated with hydrochloric acid, a yellow precipitate with perchloride of platinum. Entirely soluble in cold water. Five grains dissolved″ in water requires for complete decoloration a solution of forty-″ four grains of granulated sulphate of iron acidulated with two″ fluid drachms of diluted sulphuric acid.

Dose.—1 to 5 grains.

Preparation.

Liquor Potassii Permanganatis .	4½ grains in 1 fluid ounce

POTASSII SULPHAS.

Sulphate of Potassium.

Synonyms.—Potassæ Sulphas; Sulphate of Potash.

K_2SO_4.

Characters and Tests.—In colourless hard six-sided prisms terminated by six-sided pyramids; decrepitates strongly when heated; sparingly soluble in water; insoluble in alcohol. The aqueous solution is neutral to test-paper, gives no precipitate with oxalate of ammonium, but acidulated with hydrochloric acid it is precipitated white by chloride of barium, and yellow by perchloride of platinum.

Absence of $KHSO_4$.

Dose.—15 to 60 grains.

Preparations containing Sulphate of Potassium.

Pilula Colocynthidis Composita .	1 part in 24, nearly
,, ,, et Hyoscyami .	1 part in 36, nearly
,, Ipecacuanhæ cum Scilla .	1 part in 3, nearly
Pulvis Ipecacuanhæ Compositus .	4 parts in 5

POTASSII TARTRAS.

Tartrate of Potassium.

Synonyms.—Potassæ Tartras; Tartrate of Potash.

$K_2C_4H_4O_6,H_2O$.

Take of

Acid Tartrate of Potassium .	20 ounces, or a sufficiency
Carbonate of Potassium .	9 ounces, or a sufficiency
Boiling Distilled Water .	2½ pints

Dissolve the carbonate of potassium in the water; add by degrees the acid tartrate of potassium; and if, after a few minutes' boiling, the liquid is not neutral to test-paper, make it so by the careful addition of more of the carbonate or of the acid tartrate. Then filter, concentrate till a pellicle forms on the surface, and set it aside to cool and crystallise. More crystals may be obtained by evaporating and cooling the mother liquor. Drain the crystals, dry them by exposure to the air in a warm place, and preserve them in a stoppered bottle. $H_2O + 2KHC_4H_4O_6 + K_2CO_3 = 2K_2C_4H_4O_6 \cdot H_2O + CO_2$.

Characters and Tests.—In small colourless four- or six-sided prisms. Heated with sulphuric acid it forms a black tarry fluid, evolving inflammable gas and the odour of burned sugar. Acetic acid added sparingly to its aqueous solution, unless very dilute, causes the separation of a white crystalline precipitate. Entirely dissolved by its own weight of water. 122 grains, heated to redness till gases cease to be evolved, leaves an alkaline residue, which when treated with distilled water, filtered, and well washed, yields a clear solution requiring for exact neutralisation 990 grain-measures of the volumetric solution of oxalic acid. 99%

1cc $\frac{N}{2}$ $H_2C_2O_4$ = ·122 grms $K_2C_4H_4$

Dose.—60 grains to ½ ounce.

POTASSII TARTRAS ACIDA.

Acid Tartrate of Potassium.

Synonyms.—Potassæ Bitartras; Bitartrate of Potash; Potassæ Tartras Acida; Acid Tartrate of Potash; Cream of Tartar.

$KHC_4H_4O_6$.

An acid salt obtained from the crude tartar which is deposited during the fermentation of grape juice, and from the lees of wine.

Characters and Tests.—A gritty white powder, or fragments of cakes crystallised on one surface; of a pleasant acid taste, sparingly soluble in water, insoluble in spirit. Heated in a crucible it evolves inflammable gas and the odour of burned sugar, and leaves a black residue. This effervesces with diluted hydrochloric acid, and forms a solution which when filtered gives a yellow precipitate with perchloride of platinum, and when neutralised by ammonia is usually rendered somewhat turbid by oxalic acid. Dried on a water-bath, 204 grains, heated to redness till gas ceases to be evolved, leaves an alkaline residue, which, when treated with distilled water, filtered, and well washed, yields a clear solution requiring for exact neutralisation at least 1000 grain-measures of the volumetric solution of oxalic acid. = 92% $KHC_4H_4O_6$ in dry salt.
remainder chiefly $CaC_4H_4O_6$

Dose.—20 to 60 grains.

1cc. $\frac{N}{2}$ ox = ·188 grm of $KHC_4H_4O_6$ ~~H_2O~~.

Preparations for which Acid Tartrate of Potassium is used.

Acidum Tartaricum
Antimonium Tartaratum
Confectio Sulphuris
Ferrum Tartaratum
Potassii Tartras
Pulvis Jalapæ Compositus
Soda Tartarata

PRUNUM.

Prune. N.O. Rosaceæ.

The dried drupe of Prunus domestica, *Linn.*, *var.* Juliana, *DC.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 96. Imported from the South of France. & W. Asia.

Characters.—Somewhat ovoid or oblong, about one inch and a quarter long, black, shrivelled; pulp brownish, without marked odour, but with a sweet and somewhat mucilaginous acidulous taste.

Preparation.—Confectio Sennæ, 1 part in 12½.

P.C. In the sarcocarp sugar 12-25%. Pectin Malic acid
In the seed fixed oil amygdalin, emulsin.

PTEROCARPI LIGNUM.

Red Sandal-Wood.

N.O. Leguminosæ. *Synonym.*—Red Sanders-Wood.

The sliced or rasped heart-wood of Pterocarpus santalinus, *Linn. fil.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 82. Madras cultd.

Characters.—As imported it is in dense heavy irregular logs varying in length and thickness, dark reddish-brown or blackish-brown externally, and internally, if cut transversely, deep blood-red variegated with zones of a lighter red colour. It is usually found in the pharmacies in the form of raspings or small chips, which are deep reddish-brown in colour, very slightly astringent in taste, and when rubbed of a faint peculiar odour. P.C. Santalin; santal; pterocarpin.

Preparation.—Tinctura Lavandulæ Composita.

The official powders are intimate mixtures of 2 or more finely pulverised drugs.

PULVIS AMYGDALÆ COMPOSITUS.

Compound Powder of Almonds.

Take of

Sweet Almonds	8 ounces	or	8 parts
Refined Sugar, in powder	4 ounces	,,	4 parts
Gum Acacia, in powder	1 ounce	,,	1 part

Steep the almonds in water until their skins can easily be removed; and, when blanched, dry them thoroughly with a soft cloth, and rub them lightly in a mortar to a smooth con-

Hot water is best to steep the almonds in 15-30 mins: being ample. After bleaching + rubbing with a cloth it is advantageous to put the almonds in a warm dry place for some hours; this will insure a drier powder. The almonds may then be rubbed firmly but not beaten as this would partially separate the fatty oil + be less easily incorporated into a powder.
N.B. Although the hot water process is quickest it has a tendency to "sweat" out the oil, + the finished product is not so white as when cold water is used.

sistence. Mix the gum and the sugar; and adding them to the almond pulp gradually, rub the whole to a coarse powder. Keep it in a lightly covered jar. May be passed thro' a No 10 or 12 sieve. If kept in a tightly closed bottle or jar it will become rancid.

Preparation.

Mistura Amygdalæ . . . 1 ounce to 8 fluid ounces

PULVIS ANTIMONIALIS.

An amorphous powder

Antimonial Powder.

1– 3.

Take of

Oxide of Antimony . .	1 ounce	.. or ..	1 part
Phosphate of Calcium .	2 ounces	.. ,, ..	2 parts

Mix them thoroughly.

Dose.—3 to 5 grains.

PULVIS CATECHU COMPOSITUS.

1– 2½.

Compound Powder of Catechu.

Take of

Catechu, in powder . .	4 ounces	.. or ..	4 parts
Kino, in powder . . .	2 ounces	.. ,, ..	2 parts
Rhatany Root, in powder .	2 ounces	.. ,, ..	2 parts
Cinnamon Bark, in powder .	1 ounce	.. ,, ..	1 part
Nutmeg, in powder . .	1 ounce	.. ,, ..	1 part

Mix them thoroughly, pass the powder through a fine (i.e. about No 40.) sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

Dose.—20 to 40 grains.

PULVIS CINNAMOMI COMPOSITUS.

Compound Powder of Cinnamon.

Synonym.—Pulvis Aromaticus.

Take of

Cinnamon Bark, in powder .	1 ounce	.. or ..	1 part
Cardamom Seeds, in powder .	1 ounce	.. ,, ..	1 part
Ginger, in powder . .	1 ounce	.. ,, ..	1 part

last trituration is necessary because the larger particles will be last to pass through the sieve & would therefore render the 'd product deficient in uniformity.

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

Dose.—3 to 10 grains.

Preparations.

Pilula Aloes et Ferri . . .	1 part in $3\frac{1}{2}$
,, Cambogiæ Composita .	1 part in 6, nearly

PULVIS CRETÆ AROMATICUS.

Aromatic Powder of Chalk.

Synonym.—Confectio Aromatica.

Take of

Cinnamon Bark, in powder .	4 ounces . . .	or . .	4 parts
Nutmeg, in powder . .	3 ounces . . .	,, . .	3 parts
Saffron, in powder . .	3 ounces . . .	,, . .	3 parts
Cloves, in powder . .	$1\frac{1}{2}$ ounce . .	,, . .	$1\frac{1}{2}$ part
Cardamom Seeds, in powder	1 ounce . . .	,, . .	1 part
Refined Sugar, in powder .	25 ounces . .	,, . .	25 parts
Prepared Chalk . . .	11 ounces . .	,, . .	11 parts

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

If a product of bright colour be desired, the saffron may previously be moistened and triturated with a little water or spirit, or the fresh and faintly damp mixture may be subjected to considerable pressure in the triturating process.

Dose.—10 to 60 grains.

Off: Prep: Pulv: Cret: Arom: c̄ Opio.

PULVIS CRETÆ AROMATICUS CUM OPIO.

Opium 1-40.

Aromatic Powder of Chalk and Opium.

Take of

Aromatic Powder of Chalk	$9\frac{3}{4}$ ounces .	or . .	39 parts
Opium, in powder . .	$\frac{1}{4}$ ounce . .	,, . .	1 part

The physiological action of opium is aided by aromatics but retarded by astringents, hence the varying proportions of opium in the doses of different compounds.

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

Dose.—10 to 40 grains.

A "Triturate" is a powder consisting of an active ingredient mixed with a definite proportion of a diluent (usually sugar of milk).

PULVIS ELATERINI COMPOSITUS.

Compound Powder of Elaterin.

P. Elaterin Co is really a triturate

Take of

Elaterin	5 grains	or	1 part
Sugar of Milk	195 grains	,,	39 parts

1 in 40

Rub them together in a mortar until they are reduced to fine powder and intimately mixed.

Dose.—$\frac{1}{2}$ grain to 5 grains.

PULVIS GLYCYRRHIZÆ COMPOSITUS.

Compound Powder of Liquorice.

Sennæ 1 in 6.

Synonym.—Pulvis Glycyrrhizæ Compositus cum Sulphure.

Take of

Senna, in fine powder	2 ounces	or	2 parts
Liquorice Root, in fine powder	2 ounces	,,	2 parts
Fennel Fruit, in fine powder	1 ounce	,,	1 part
Sublimed Sulphur	1 ounce	,,	1 part
Refined Sugar, in powder	6 ounces	,,	6 parts

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar.

Dose.—30 to 60 grains.

PULVIS IPECACUANHÆ COMPOSITUS.

Compound Powder of Ipecacuanha.

Opium 1 in 10.

Take of

Ipecacuanha, in powder	$\frac{1}{2}$ ounce	or	1 part
Opium, in powder	$\frac{1}{2}$ ounce	,,	1 part
Sulphate of Potassium, in powder	4 ounces	,,	8 parts

Minute division of the active ingredients is promoted by prolonged trituration with the K_2SO_4 which is a very hard salt.

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

Dose.—5 to 15 grains.

Preparation.

Pilula Ipecacuanhæ cum Scilla . . 3 parts in 7

1 in 3.

PULVIS JALAPÆ COMPOSITUS.

Compound Powder of Jalap.

Take of

Jalap, in powder . . .	5 ounces	. . or . .	5 parts
Acid Tartrate of Potassium .	9 ounces	. . ,, . .	9 parts
Ginger, in powder . .	1 ounce	. . ,, . .	1 part

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar.

Dose.—20 to 60 grains.

Opium 1 in 20.

PULVIS KINO COMPOSITUS.

Compound Powder of Kino.

Take of

Kino, in powder . . .	3¾ ounces	. . or . .	15 parts
Opium, in powder . . .	¼ ounce	. . . ,, . .	1 part
Cinnamon Bark, in powder .	1 ounce	. . . ,, . .	4 parts

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

Dose.—5 to 20 grains.

1 in 10.

PULVIS OPII COMPOSITUS.

Compound Powder of Opium.

Take of

Opium, in powder . . .	1½ ounce	. . or . .	3 parts
Black Pepper, in powder .	2 ounces	. . ,, . .	4 parts
Ginger, in powder . .	5 ounces	. . ,, . .	10 parts
Caraway Fruit, in powder .	6 ounces	. . ,, . .	12 parts
"Tragacanth, in powder . .	½ ounce	. . ,, . .	1 part

" Tragacanth is added to this powder on account of its use in preparing the confection of opium. It stiffens the preparat

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar. Keep it in a stoppered bottle.

Dose.—2 to 5 grains.

Preparation.—Confectio Opii, 1 part in·4.

PULVIS RHEI COMPOSITUS.

in 4½'

Compound Powder of Rhubarb.

Synonym.—Gregory's Powder.

Take of

Rhubarb Root, in powder	2 ounces	or	2 parts
Light Magnesia	6 ounces	,,	6 parts
Ginger, in powder	1 ounce	,,	1 part

Mix them thoroughly, pass the powder through a fine sieve, and preserve in a well-closed bottle in a dry place.

"The more free the powdered rhubarb is from oil, and the "more recently prepared the magnesia, the more readily will "the powder mix with water. If a more condensed powder be "desired, heavy magnesia may be employed.

Dose.—20 to 60 grains.

This precaution is very necessary as the powder is liable to absorb moisture + CO_2 from the air; when combination takes place between the magnesia + one of the constituents of the rhubarb with production of a pinkish colour. Hence it should not be mixed in a damp atmosphere. It is well to store the powder in a dark cupboard as a strong light has the same effect as damp on it.

PULVIS SCAMMONII COMPOSITUS.

in 2.

Compound Powder of Scammony.

Take of

Scammony Resin, in powder	4 ounces	or	4 parts
Jalap, in powder	3 ounces	,,	3 parts
Ginger, in powder	1 ounce	,,	1 part

Mix them thoroughly, pass the powder through a fine sieve, and finally rub it lightly in a mortar.

Dose.—10 to 20 grains.

PULVIS TRAGACANTHÆ COMPOSITUS.

Compound Powder of Tragacanth.

Take of

Tragacanth, in powder	of each	1 ounce	or 1 part
Gum Acacia, in powder			
Starch, in powder			
Refined Sugar, in powder		3 ounces	„ 3 parts

Rub them well together.

Dose.—20 to 60 grains.

PYRETHRI RADIX.

Pellitory Root.

N. O. Compositæ.

The dried root of Anacyclus Pyrethrum, *DC.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 151. Highlands of N. Africa.

Characters.—In unbranched pieces, from two to four inches long, and from half to three-quarters of an inch thick, cylindrical or somewhat tapering, and covered by a thickish brown shrivelled bark studded by dark-coloured receptacles of resin. Breaks with a close fracture, the fractured surface presenting a radiated appearance. Inodorous, but when chewed causing a burning and pricking sensation over the whole mouth and throat.

Preparation.—Tinctura Pyrethri, 4 ounces to 1 pint.

P.C. Acrid brown resin; 50% Inulin.
Acrid fixed oils trace tannin & mucilage.

PYROXYLIN.

Pyroxylin. Di nitrocellulin.

Take of

Cotton Wool		1 ounce
Sulphuric Acid	of each	5 fluid ounces
Nitric Acid		

The H_2SO_4 is used to render the HNO_3 stronger by combining with the H_2O.

Mix the acids in a porcelain mortar, immerse the cotton in the mixture, and stir it for three minutes with a glass

Time must be adhered to $C_6H_{10}O_5 + 2HNO_3 = C_6H_8(NO_2)_2O_5 + 2H_2O$
or Tri-nitro-cellulin
will be formed.

rod until it is thoroughly wetted by the acids. Transfer the cotton to a vessel containing water, stir it well with a glass rod, decant the liquid, pour more water upon the mass, agitate again, and repeat the affusion, agitation, and decantation, until the washings cease to give a precipitate with chloride of barium. Drain the product on filtering paper, and dry in a water-bath. If free acid be left in the product it is liable to spontaneous decomposition during or after drying

Test.—Readily soluble in a mixture of ether and rectified spirit; leaves no residue when exploded by heat.

Preparations.—Collodium; Collodium Vesicans.

QUASSIÆ LIGNUM.

Quassia Wood. N.O. Simarubaceæ.

The chips, shavings, or raspings of the wood of Picræna excelsa, *Lindl.* (Quassia excelsa, *Swartz*); *Bentl. and Trim. Med. Pl.* vol. i. plate 57. Jamaica.

Characters and Test.—In billets or logs varying in length and size, but frequently as thick as a man's thigh, and covered by a dark-grey bark. The wood is dense, tough, porous, and of a pale yellowish-white colour. In the pharmacies it is commonly met with in the form of chips, shavings, or raspings of the wood only, which are inodorous, but have an intense and purely bitter taste. An infusion does not become black" or bluish-black on the addition of a persalt of iron."

Preparations.

Extractum Quassiæ	
Infusum Quassiæ .	5·5 grains to 1 fluid ounce
Tinctura Quassiæ .	$16\frac{1}{2}$ grains to 1 fluid ounce

P.C. Mucilage, pectin, resin, alkaloid, picrasmin

QUERCÛS CORTEX. Free from Tannin.

Oak Bark.

N.O. Cupuliferæ.

The dried bark of the smaller branches and young stems of Quercus Robur, *Linn.* (Quercus pedunculata, *Ehr.*); *Bentl. and Trim. Med. Pl.* vol. iv. plate 248. Collected in spring, from trees growing in Britain. Largely in N. Forest.

Characters.—In quills covered with a smooth shining silvery or ash-grey variegated with brown corky layer; internally cinnamon-brown or brownish-red and longitudinally striated; fracture tough and fibrous; taste very astringent; no marked odour.

Preparation.—Decoctum Quercûs, 1¼ ounce to 1 pint.

P.C. About 11% of Quercitannic acid. A terpene resin + phlobaphen. The colouring matter is "oak red" identical with cinchona red. It is a decompo product of tannin + always occurs in barks containing quantities of Tannin It may be regarded as an anhydride of tannic acid.

QUININÆ HYDROCHLORAS.

Hydrochlorate of Quinine.

Synonyms.—Quiniæ Hydrochloras; Hydrochlorate of Quinia.

$C_{20}H_{24}N_2O_2,HCl,2H_2O$.

Obtained from the same sources and by the same process as sulphate of quinine, the separated alkaloid being neutralised by hydrochloric acid.

Characters and Tests.—In crystals resembling those of sulphate of quinine, but generally somewhat larger. It is soluble in about thirty-four parts of water or about three parts of spirit at common temperatures, and very soluble in the boiling liquids. Its solution yields a green colour when treated with chlorine water and then with ammonia; with chloride of barium it gives only a faint turbidity; and with nitrate of silver a white precipitate insoluble in nitric acid. It may be converted into sulphate of quinine by dissolving it together with an equal weight of sulphate of sodium in ten times its weight of hot distilled water, and setting the mixture aside at 60° F. (15°·5 C.) for half an hour. Such sulphate should respond to the characters and tests that are mentioned under 'Quininæ Sulphas.' Dried at a temperature of 212° F. (100° C.), it loses nine per cent. of water.

Dose.—1 to 10 grains.

Preparation.—Tinctura Quininæ, 1 grain in 1 fluid drachm.

QUININÆ SULPHAS.

Sulphate of Quinine.

Synonyms.—Quiniæ Sulphas; Sulphate of Quinia.

$((C_{20}H_{24}N_2O_2)_2,H_2SO_4)_2,15H_2O.$

The sulphate of an alkaloid prepared from the powder of various kinds of Cinchona and Remijia bark by extraction with spirit after the addition of lime, or by the action of alkali on an acidulated aqueous infusion, with subsequent neutralisation of the alkaloid by sulphuric acid and purification of the resulting salt.

Characters and Tests.—Filiform silky snow-white crystals, of a pure intensely bitter taste, sparingly soluble in water, that is, 1 part in 700 or 800 parts at common temperatures, yet imparting to the water a bluish tint or fluorescent appearance. Entirely soluble in water acidulated by sulphuric acid. Its solutions give with chloride of barium a white precipitate insoluble in nitric acid, or when treated first with solution of chlorine and afterwards with ammonia they become of an emerald-green colour, and solution of ammonia gives with them a white precipitate of quinine soluble in ether and in excess of the solution of ammonia. It dissolves in pure sulphuric acid with a feeble yellowish tint, and undergoes no further change of colour when gently warmed. Twenty-five grains of the freshly prepared salt should lose 3·8 grains of water by drying at 212° F. (100° C.) Ignited with free access of air, it burns without leaving any residue.

Absence of Salacin.

Test for Cinchonidine and Cinchonine.—Heat 100 grains of the sulphate of quinine in five or six ounces of boiling water, with three or four drops of diluted sulphuric acid. Set the solution aside until cold. Separate, by filtration, the purified sulphate of quinine which has crystallised out. To the filtrate, which should nearly fill a bottle or flask, add ether, shaking occasionally, until a distinct layer of ether remains undissolved. Add ammonia in very slight excess, and shake thoroughly, so that the quinine at first precipitated shall be redissolved. Set aside for some hours or during a night.

Remove the supernatant clear ethereal fluid, which should occupy the neck of the vessel, by a pipette. Wash the residual aqueous fluid and any separated crystals of alkaloid with a very little more ether, once or twice. Collect the separated alkaloid on a tared filter, wash it with a little ether, dry at 212° F. (100° C.), and weigh. Four parts of such alkaloid correspond to five parts of crystallised sulphate of cinchonidine or of sulphate of cinchonine.

Test for Quinidine.—Recrystallise fifty grains of the original sulphate of quinine as described in the previous paragraph. To the filtrate add solution of iodide of potassium, and a little spirit of wine to prevent the precipitation of amorphous hydriodates. Collect any separated hydriodate of quinidine, wash with a little water, dry, and weigh. The weight represents about an equal weight of crystallised sulphate of quinidine.

Test for Cupreine.—Shake the recrystallised sulphate of quinine, obtained in testing the original sulphate of quinine for cinchonidine and cinchonine, with one fluid ounce of ether and a quarter of an ounce of solution of ammonia, and to this ethereal solution, separated, add the ethereal fluid and washings also obtained in testing the original sulphate for the two alkaloids just mentioned. Shake this ethereal liquor with a quarter of a fluid ounce of a ten per cent. solution of caustic soda, adding water if any solid matter separates. Remove the ethereal solution. Wash the aqueous solution with more ether, and remove the ethereal washings. Add diluted sulphuric acid to the aqueous fluid heated to boiling, until the soda is exactly neutralised. When cold collect any sulphate of cupreine that has crystallised out on a tared filter; dry, and weigh.

'Sulphate of Quinine' should not contain much more than five per cent. of sulphates of other cinchona alkaloids.

Dose.—1 to 10 grains.

Preparations.

Ferri et Quininæ Citras . .	15 parts Quinine in 100
Tinctura Quininæ Ammoniata .	1 grain in 1 fluid drachm
Vinum Quininæ . . .	1 grain in 1 fluid ounce

RESINA.

On distillation yields "Rosin Oil" which is a quick drying oil used in manufacture of "Brunswick Black" &c

Resin.

N.O. Coniferæ.

The residue left after the distillation of the oil of turpentine from the crude oleo-resin (turpentine) of various species of Pinus, *Linn.* Contains 85% of the anhydride of abietic acid.

A.

Characters.—Translucent, yellowish, compact, brittle, pulverisable; fracture shining; odour and taste faintly terebinthinate. It is easily fusible, and burns with a dense yellow flame and much smoke.

Preparations.

Charta Epispastica
Emplastrum Calefaciens
,, Cantharidis
,, Picis
Emplastrum Plumbi Iodidi
,, Resinæ
,, Saponis
Unguentum Resinæ
Unguentum Terebinthinæ

RHAMNI FRANGULÆ CORTEX.

Frangula Bark.

Synonym.—Cortex Frangulæ. N.O. Rhamnaceæ.

The dried bark of Rhamnus Frangula, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 65. Collected from the young trunk and moderate-sized branches, and kept at least one year before being used. Europe & N. Asia.

Characters.—In small quills, the bark itself being about one twenty-fifth of an inch or somewhat more in thickness, and covered with a greyish-brown or blackish-brown corky layer marked with transverse whitish lenticels; inner surface smooth, brownish-yellow; fracture short and purplish externally, but somewhat fibrous and yellowish within. No marked odour; taste pleasant, sweetish, and slightly bitter.

This is extremely characteristic; it is caused by retrograde development of the chlorophyll.

Preparations.

Extractum Rhamni Frangulæ
" " " Liquidum

P.C. Frangulin, (yellow glucoside) Emodin Isoemodin
Fresh frangula bark contains neither emodin nor frangulin.

RHAMNI PURSHIANI CORTEX.

Sacred Bark.

N. O. Rhamnaceæ.

Synonym.—Cascara Sagrada.

The dried bark of Rhamnus Purshianus, *DC.*; *Hook. Flora Boreali-americana*, plate 43. Northern Idaho + westward to Pacific ocean

Washington Territory

Characters.—In quills or incurved pieces of varying lengths and sizes, the bark itself being from about one twenty-fifth to one-eighth of an inch thick, smooth or nearly so externally, covered with a greyish-white layer, which is usually easily removed, and frequently marked with spots or patches of adherent lichens. Beneath the surface it is violet-brown, reddish-brown, or brownish; and internally reddish-brown or yellowish-brown, and nearly smooth, although somewhat striated longitudinally. Fracture short, except internally, where it is slightly fibrous, more especially in the larger pieces. Taste bitter. It is frequently imported in flattened packets, consisting of small pieces of the bark compressed into a more or less compact mass.

P.C. 3 resins; tannin; white sublimable principle; yellow cryst: principle (resembling Frangulin) The composition probably changes on keeping.

Preparations.

Extractum Cascaræ Sagradæ
" " " Liquidum

RHEI RADIX.

Rhubarb Root.

The root, more or less deprived of its bark, sliced and dried, of Rheum palmatum, *Linn.*; Rheum officinale, *Baillon*; and probably other species; *Bentl. and Trim. Med. Pl.* vol. iii. plates 213 and 214. Collected and prepared in China and Thibet. W. + C. China.

Characters.—In somewhat cylindrical, barrel-shaped, conical, plano-convex, or irregularly formed pieces; the outer surface covered with a bright yellowish-brown powder, rounded or somewhat angular, smooth or more or less wrinkled, and marked beneath the powder with reddish-brown or dark rusty-brown lines, intermixed in a yellowish-brown substance, and

P.C. Chrysophan (yields with dilute acids sugar + chrysophanic acid. Chrysophanic acid; erythroretin; Emodin, Pheoretin; Aporetin starch tannin crystals of CaC_2O_4.

frequently presenting small scattered starlike spots. Frequently the pieces are bored with a hole which contains the remains of the cord used to suspend them to dry, or the cord has been removed. Hard, compact, fracture uneven, presenting a marbled appearance, and in some cases exhibiting a ring of star-like spots. Odour peculiar and somewhat aromatic; taste bitter, feebly astringent, and when chewed it feels gritty between the teeth.

Dose.—5 to 20 grains.

Preparations.

Extractum Rhei	
Infusum Rhei . .	11 grains to 1 fluid ounce
Pilula Rhei Composita .	1 part in 4, nearly
Pulvis Rhei Compositus	2 parts in 9
Syrupus Rhei	
Tinctura Rhei . .	44 grains to 1 fluid ounce
Vinum Rhei . . .	33 grains to 1 fluid ounce

RHŒADOS PETALA.

Red-Poppy Petals.

N.O. Papaveraceæ.

The fresh petals of Papaver Rhœas, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 19. From indigenous plants. Asia + Europe.

Characters.—Of a bright scarlet colour, often nearly black at the base, unequal in size, with a strong narcotic odour, and slightly bitter taste.

P.C. Rhœadine

Preparation.—Syrupus Rhœados.

Rhœadic + Papaveric acids (colouring matters).

ROSÆ CANINÆ FRUCTUS.

Fruit of the Dog-Rose. Hips.

Cynosbata

The ripe fruit of Rosa canina, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 103, and other indigenous allied species. Europe

N.O. Rosaceæ.

Characters.—Three-quarters of an inch or more in length ovoid or somewhat oval, smooth, shining, scarlet or red inodorous; taste pleasant, sweetish, acidulous.

Preparation.—Confectio Rosæ Caninæ.

P.C. Malic acid 7-8% Citric acid
Sugar 30% Gum 25% Only a trace of tannin.

ROSÆ CENTIFOLIÆ PETALA.

Cabbage-Rose Petals.

The fresh fully expanded petals of Rosa centifolia, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 105. From plants cultivated in Britain. N. Asia.

Characters.—Large, thin, delicate, very fragrant, and with a sweetish, slightly astringent, bitterish taste. Both odour and taste are readily imparted to water.

Preparation.—Aqua Rosæ, 10 pounds to 1 gallon.

P.C. Little Vol: oil; mucilage; sugar tannin malates &c.

ROSÆ GALLICÆ PETALA.

Red-Rose Petals.

The fresh and dried unexpanded petals of Rosa gallica, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 104. From plants cultivated in Britain. Asia M + S Europe.

Characters.—Usually in little cone-like masses, or sometimes separate and more or less crumpled; fine purplish-red, retained after drying, velvety; odour fragrant, roseate, especially developed by drying; taste bitterish, feebly acid, and astringent.

Preparations.

Confectio Rosæ Gallicæ .	1 part fresh petals in 4
Infusum Rosæ Acidum .	½ ounce dried petals to 1 pint
Syrupus Rosæ Gallicæ	

P.C. a trace of vol: oil mucilage sugar quercitrin.

Intensely poisonous

SABADILLA.

From Sp. Cebada, Barley from its resemblance of its flowering spike to an ear of barley.

Cevadilla.

N.O. Melanthaceæ.

The dried ripe seeds of Schœnocaulon officinale, *A. Gray* (Asagræa officinalis, *Lindl.*); *Bot. Reg.* vol. xxv. plate 33. The seeds are sometimes imported in, or mixed with, their pericarps, but these should be rejected before the seeds are used. Indig: to E. Mexico also to Gautemala + Venezuela
Seeds alone imported from Venezuela Fruits from Mexico.

Characters.—About one-quarter of an inch or less in length, narrow, fusiform or somewhat scimitar-shaped, prolonged above into a membranous wing, somewhat compressed, shining, wrinkled, blackish-brown. Taste bitter, acrid; inodorous, but when powdered producing violent sneezing.

Preparation.—Veratrina.

P.C. Veratrine, Cevadine, cevadilline sabadine,
cevadic + veratric acids &c Fixed oil.

SABINÆ CACUMINA.

Savin Tops.

N.O. Coniferæ.

The fresh and dried tops of Juniperus Sabina, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 254. Collected in spring, from plants cultivated in Britain. Found greater portion of Europe + parts N. America.

Characters.—Twigs densely covered with minute imbricated adpressed dark green (or when dried yellowish-green) leaves, with a large oval depressed central gland on their back. Odour, when rubbed or bruised, strong and peculiar; taste acrid, bitter, and disagreeable. ∴ An essential oil 2.5% Tannin Resin + chlorophyll.

Dose, in powder.—4 to 10 grains.

Preparations.

Oleum Sabinæ, from fresh plant	
Tinctura Sabinæ .	2½ ounces, dried, to 1 pint
Unguentum Sabinæ .	8 ounces, fresh, to 19 ounces

The casein of the milk is separated by means of a little dilute acid (or rennet) filtering neutralizing with lime evaporating to low bulk + crystallizing. Filter before crystallising if necessary. Oxidised with HNO_3 yields mucic + saccharic acids (probably also oxalic) Reduces Fehling's sol: on boiling

SACCHARUM LACTIS.

Sugar of Milk.

Lactose.

4½ - 5% in milk

$C_{12}H_{24}O_{12}$. $(C_{12}H_{22}O_{11} \cdot H_2O)$

A crystallised sugar, obtained from the whey of Milk by evaporation. Occurs in the milk of all Mammals Obtained in the manufacture of cheese.

Characters.—Usually in cylindrical masses, two inches in diameter, with a cord or stick in the axis, or in fragments of cakes; greyish-white, crystalline on the surface and in its texture, translucent, hard, scentless, faintly sweet, gritty when chewed. Soluble in about seven parts of water at common temperatures, and in about one part of boiling water.

Preparation.—Pulvis Elaterini Compositus.
Extractum Conyni Siccum.

SACCHARUM PURIFICATUM.

Refined Sugar.

As Beet sugar is frequently alkaline it should not be use for B.P. preparations.

Synonym.—Sucrose.

$C_{12}H_{22}O_{11}$.

Cane sugar is the anhydride resulting from the union of glu levulo

Boiled with dilute acids it is decomposed into a mixture of dextrose + levulose (invert sugar). This process (inversion) takes place to some extent when impure sugar is allowed to stand. Hence invert sugar is found in the brown sugars of trade.

Oxidising agents convert it into oxalic + saccharic acids

Characters and Tests.—Compact crystalline conical loaves, known in commerce as lump sugar. Readily and completely soluble in water, forming a clear bright syrup which yields no red or yellowish precipitate, or scarcely a trace, on heating it to near the boiling point of water for a short time with a little solution of sulphate of copper and excess of solution of potash. absence of glucose.

Preparations.

Confectio Rosæ Caninæ
,, ,, Gallicæ
,, Sennæ
Extractum Sarsæ Liquidum
Ferri Carbonas Saccharata
Liquor Calcis Saccharatus
Mistura Ferri Composita
,, Guaiaci
,, Spiritus Vini Gallici
Pilula Ferri Iodidi
Pulvis Amygdalæ Compositus
,, Cretæ Aromaticus
,, Glycyrrhizæ Compositus
,, Tragacanthæ Compositus
Sodii Citro-tartras Effervescens

All the Syrups and Lozenges

Saccharum officinarum. Gramineæ. Cult^d. S. America India Mexico.

SALICINUM.

Salicin.

$C_{13}H_{18}O_7$.

N. O. Salicaceæ.

A crystalline glucoside obtained by treating the bark of Salix alba, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 234; and other species of Salix, *Linn.*; and the bark of various species of Populus, *Linn.*, with hot water, removing tannin and colouring matter from the decoction, evaporating, purifying, and recrystallising.

S. Caprea
S. Russelliana
S. fragilis.

Characters and Tests.—Colourless shining crystals with a very bitter taste. Soluble in about twenty-eight parts of water or sixty-five parts of spirit at common temperatures; insoluble in ether. Sulphuric acid colours it red. A small″ quantity heated with a little red chromate of potassium, a″ few drops of sulphuric acid and some water, yields vapours of″ an oil having the odour of meadow-sweet. The crystals melt when heated, and emit vapours having the odour of meadow-sweet. On ignition in air it leaves no residue.

Dose.—3 to 20 grains.

SAMBUCI FLORES.

Elder Flowers.

N. O. Caprifoliaceæ.

The fresh flowers of Sambucus nigra, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 137. From indigenous plants.

Characters.—In corymbose cymes, from five to seven inches across. Flowers small; calyx superior, five-toothed; corolla flat, rotate, five-sected, creamy-white, with five stamens inserted in the tube. Odour fragrant, but somewhat sickly; taste bitterish.

Preparation.—Aqua Sambuci, 10 pounds to 1 gallon.

SANTONICA.

N.O. Compositæ.

Santonica.

The dried unexpanded flower-heads or capitula of Artemisia maritima, *var.* Stechmanniana, *Besser* (Artemisia pauciflora, *Weber*); *Bentl. and Trim. Med. Pl.* vol. iii. plate 157. Turkestan.

Characters.—About one-tenth of an inch in length, oblong-ovoid, obtuse, pale greenish-brown, nearly smooth; resembling seeds in appearance, but consisting of from twelve to eighteen imbricated involucral scales with a broad thick yellowish-green midrib, enclosing three to five somewhat tubular florets. Odour, more especially when rubbed, strong, peculiar, and somewhat camphoraceous; taste bitter and camphoraceous.

Dose.—10 to 60 grains.

Preparation.—Santoninum.

P.C. 2% Vol: oil 1½-2% santonin resin gum.

SANTONINUM.

Santonin.

$C_{15}H_{18}O_3$.

A crystalline principle prepared from Santonica. It may be obtained by the following process:—

Take of

Santonica, bruised	1 pound
Slaked Lime	7 ounces
Hydrochloric Acid	a sufficiency
Solution of Ammonia	¼ fluid ounce
Rectified Spirit	14 fluid ounces
Purified Animal Charcoal	60 grains
Distilled Water	a sufficiency

Boil the santonica with a gallon of the water and five ounces of the lime in a copper or tinned iron vessel for an hour, strain through a stout cloth, and express strongly. Mix the residue with half a gallon of the water and the rest of the lime, boil for half an hour, strain and express as before. Mix the strained liquors, let them settle, decant the fluid from the deposit, and evaporate to the bulk of two pints and a half. To the liquor while hot, add, with diligent stirring, the hydrochloric acid until the fluid has become slightly and permanently acid, and set it aside for five days that the precipitate may subside. Remove, by skimming, any oily matter which floats on the surface, and carefully decant the greater part of the fluid from the precipitate. Collect this on a paper filter, wash it first with cold distilled water till the washings pass colourless and nearly free from acid reaction, then with the solution of ammonia previously diluted with five fluid ounces of the water, and lastly with cold distilled water till the washings pass colourless. Press the filter containing the precipitate between folds of filtering paper, and dry it in a warm place. Scrape the dry precipitate from the filter, and mix it with the animal charcoal. Add to the mixture nine ounces of the rectified spirit, digest for half an hour, and boil for ten minutes. Filter while hot, wash the charcoal with an ounce of boiling spirit, and set the filtrate aside for two days in a cool dark place to crystallise. Separate the mother liquor from the crystals, and concentrate to obtain a further product. Collect the crystals, let them drain, redissolve them in four ounces of boiling spirit, and let the solution crystallise as before. Lastly, dry the crystals on filtering paper in the dark, and preserve them in a bottle protected from light.

Characters and Tests.—Colourless flat rhombic prisms, feebly bitter, fusible and sublimable when gently heated, scarcely soluble in cold water, sparingly in boiling water, but abundantly in chloroform and in boiling rectified spirit. Added to warm alcoholic solution of potash it yields a violet-red colour. Sunlight renders it yellow; not dissolved by diluted mineral acids. Ignited with free access of air, it burns without leaving any residue.

Absence of
earthy ~~soaps~~ &c.
soaps.

Dose.—2 to 6 grains.

Preparation.

Trochisci Santonini . . . 1 grain in each lozenge

Saponification :- Is applied to that form of chemical action which takes place whereby ethereal salts are decomposed, with liberation of the alcohol + formation of a salt of the acid; or to that form of chemical action whereby the hydroxyl group (HO) is introduced into a compound.

SAPO ANIMALIS.

Curd Soap.

Consists mostly of stearate of Na with some oleate.

Soap made with soda and a purified animal fat consisting principally of stearin.

Characters and Tests.—White or with a very light greyish tint; dry; nearly inodorous; horny and pulverisable when kept in dry warm air. Easily moulded when heated. Soluble in rectified spirit. Soluble also in hot water, the solution being neutral or only very faintly alkaline to test-paper. It does not impart a greasy stain to paper. Incinerated it yields an ash which does not deliquesce.

Animal soap is far better for massing pills than Castile soap:

Preparations in which Curd Soap is used.

Emplastrum Resinæ
,, Saponis
,, ,, Fuscum
Extractum Colocynthidis Compositum
Linimentum Potassii Iodidi cum Sapone
Pilula Phosphori
,, Scammonii Composita
Suppositoria Acidi Carbolici cum Sapone
,, ,, Tannici cum Sapone
,, Morphinæ cum Sapone

½% alkali is the outside limit that a soap can contain to be fit for human use.

SAPO DURUS.

Hard Soap.

Synonym.—White Castile Soap.

Soap made with soda and olive oil.

Characters.—Greyish-white, dry, inodorous; horny and pulverisable when kept in dry warm air. Easily moulded when heated. Soluble in rectified spirit. Soluble also in hot water, the solution being neutral or only faintly alkaline to test-paper. It does not impart a greasy stain to paper. Incinerated it yields an ash which does not deliquesce.

The "ley" is raised to its boiling point the oil gradually added so long as the ley is saponified. A liquid is formed holding the soap + the liberated alcohol glycerine in solution. A strong solution of brine is added + the soap separates.

Preparations.

Linimentum Saponis
Pilula Aloes Barbadensis
,, ,, et Asafœtidæ
,, ,, Socotrinæ
Pilula Cambogiæ Composita
,, Rhei Composita
,, Saponis Composita
,, Scillæ Composita

SAPO MOLLIS.

Soft Soap.

This soap contains glycerine which cannot be separated by adding brine solution as this would decompose the potash into hard soap. The white specks in the commercial product are due to stearate of Na.

Soap made with potash and olive oil.

Characters.—Yellowish-green, inodorous, of a gelatinous consistence. Soluble in rectified spirit; not imparting an oily stain to paper. Incinerated it yields an ash which is very deliquescent.

Preparation.

Linimentum Terebinthinæ .	2 parts in 19, nearly

SARSÆ RADIX.

Jamaica Sarsaparilla.

N. O. Smilaceæ.

The dried root of Smilax officinalis, *Kunth.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 289. It is commonly known as Jamaica sarsaparilla from having been formerly obtained from Central America by way of that island.

+ probably S. medica + S. syphilitica Indig to C. America + N of S. America.

Characters.—Six or more feet in length, usually bent or folded and packed together into bundles of about eighteen inches long, and four to five inches in diameter, the whole bound together by a long root of the same drug. Roots more or less furrowed, varying in thickness, but not exceeding that of a goose-quill, greyish-brown to deep reddish-brown, with numerous branched rootlets. Inodorous; taste mucilaginous, and when chewed feebly bitter and faintly acrid.

Preparations.

Decoctum Sarsæ . . .	2½ ounces to 1 pint
,, ,, Compositum	2½ ounces to 1 pint
Extractum Sarsæ Liquidum .	1 pound to 16 fluid ounces

P.C. Parillin, resin traces of a vol: oil
saponin gum starch.

SASSAFRAS RADIX.

Sassafras Root.

N.O. Lauraceæ.

The dried root, reduced to chips or shavings, of Sassafras officinale, *Nees*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 220. N. America.

Characters.—In large branched pieces more or less covered with bark. Bark rough and greyish-brown or rusty-brown externally; internally smooth, glistening, and rusty-brown, with an agreeable aromatic odour, and a peculiar aromatic somewhat astringent taste. Wood soft, light in weight, greyish-yellow or greyish-red, with a similar taste and odour to the bark, but more feeble.

Preparation.

Decoctum Sarsæ Compositum . ¼ ounce to 1 pint

P.C. Vol: oil; tannin; starch.

SCAMMONIÆ RADIX.

Scammony Root.

N.O. Convolvulaceæ.

The dried root of Convolvulus Scammonia, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 187. W. Asia.

Characters and Test.—Unbranched, of varying lengths and sizes, cylindrical except towards its upper end where it is enlarged, and presents usually some remains of the slender aërial stems; more or less shrivelled, longitudinally furrowed, greyish-brown or yellowish externally, pale brown or whitish within, and when fractured small fragments of pale yellowish-brown resin may often be seen on the surface of the fracture. Odour and taste faint, somewhat resembling jalap. Rectified spirit agitated with the powder and evaporated leaves a residue having the properties of scammony resin.

Preparation.—Resina Scammoniæ.

SCAMMONIÆ RESINA.

Resin of Scammony.

Take of

Scammony Root, in coarse powder	8 ounces
Rectified Spirit	a sufficiency
Distilled Water	a sufficiency

Digest the scammony root with sixteen fluid ounces of the spirit in a covered vessel, moderately heated, for twenty-four hours; then transfer to a percolator, and, when the tincture ceases to pass, add more spirit, and let it percolate slowly until the root is exhausted. Add to the tincture four fluid ounces of the water, and distil off the spirit by a water-bath. Remove the residue while hot to an open dish, and allow it to become cold. Pour off the supernatant fluid from the resin, wash this several times with hot water, and dry it on a porcelain plate with the heat of a stove or water-bath.

It may also be prepared in a similar way from scammony.//

Characters and Tests.—In brownish translucent pieces, brittle, resinous in fracture, of a sweet fragrant odour if prepared from the root. It cannot, alone, form an emulsion with water. Its tincture does not render the fresh-cut surface of a potato blue. – absence of Guaiacum resin. Ether dissolves it entirely. absence of Jalap resin

Dose.—3 to 8 grains.

Preparations.

Confectio Scammonii	1 part in 3, nearly
Extractum Colocynthidis Compositum	1 part in 7, nearly
Pilula Colocynthidis Composita	1 part in 3, nearly
,, Scammonii Composita	1 part in 3, nearly
Pulvis Scammonii Compositus	1 part in 2

SCAMMONIUM.

Scammony.

A gum-resinous exudation obtained by incision from the living root of Convolvulus Scammonia, *Linn.*, hardened in the air.

Characters and Tests.—As usually found in commerce it is in flattish cakes or pieces of irregular form and of varying sizes, ash-grey or blackish-brown externally, and sometimes sprinkled over with a greyish-white powder. It is very brittle, and when fractured the surface is resinous, shining, more or less porous, and of a uniform dark greyish-black colour; easily triturated into an ash-grey powder, which forms with water a smooth emulsion. Odour peculiar, cheesy; and when chewed causing a slight pricking sensation in the back of the throat. It does not effervesce with hydrochloric acid. A cooled decoction is not rendered blue by solution of iodine. Ether removes about 75* per cent. of resin; and what remains is chiefly soluble gum, with a little moisture.

* This drug is liable to adulteration with Scam Resin as this is to be obtained by treating the roots with spirit

Dose.—5 to 10 grains.

Preparations.

Mistura Scammonii	3 grains in 1 fluid ounce
Resina Scammoniæ	

P.C. Resin 75 - 90 or 95 % Gum.

SCILLA.

N.O. Liliaceæ.

Squill.

The bulb of Urginea Scilla, *Steinheil*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 281; divested of its dry membranous outer scales, cut into slices, and dried.

Characters.—The slices as seen in the pharmacies are flattish or somewhat four-sided, curved, yellowish-white or somewhat pinkish, from about one to two inches long, translucent, inodorous, disagreeably bitter, brittle and easily pulverisable if quite dry, but tough and flexible when moist.

Dose, in powder.—1 to 3 grains.

P.C. Glucoside Scilloin; a bitter principle sugar + gum
Also contains crystals of CaC_2O_4.

Preparations.

Acetum Scillæ . .	2½ ounces to 1 pint, nearly
Oxymel Scillæ	
Pilula Ipecacuanhæ cum Scilla	1 part in 7
,, Scillæ Composita	1 part in 5
Syrupus Scillæ	
Tinctura Scillæ . .	2½ ounces to 1 pint

SCOPARII CACUMINA.

Broom Tops.

N. O. Leguminosae.

The fresh and dried tops of Cytisus scoparius, *Link.* (Sarothamnus scoparius, *Koch*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 70. From indigenous plants. W. Asia & of Europe.

Characters.—Branched, straight, with five wing-like angles, dark-green or yellowish-green, nearly smooth, tough. Leaves, when present, small, sessile and simple above, stalked and trifoliate below. Taste bitter and nauseous; odour when fresh and bruised peculiar, but this is nearly lost by drying.

Preparations.

Decoctum Scoparii . .	1 ounce (dried) to 1 pint
Succus Scoparii (fresh)	

[illegible] ol; scoparii, [illegible], [illegible].

SENEGÆ RADIX.

Senega Root.

N. O. Polygalaceae

The dried root of Polygala Senega, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 29. U. S. westward to Minnesota.

Characters.—Enlarged at the upper end into an irregular knotty tuberosity which bears the remains of numerous small stems, and tapering below into a more or less twisted or curved, branched, and usually keeled root, from one-fifth to more than one-third of an inch thick. Bark yellowish- or brownish-grey, transversely cracked, horny, translucent; enclosing an irregular whitish central woody column. Fracture short, brittle; odour of bark peculiar, rancid, and its taste at first sweetish, but afterwards very acrid, sourish, and causing a flow of saliva; wood tasteless and inodorous.

Preparations.

Infusum Senegæ . . .	1 ounce to 1 pint
Tinctura Senegæ . . .	2½ ounces to 1 pint

C.C. Polygalic acid, senegin fixed oil (containing virgineic acid) little vol: oil methyl salicylate) pectin sugar, colouring matter.

SENNA ALEXANDRINA.

Alexandrian Senna.

N.O. Leguminosæ.

The dried leaflets of Cassia acutifolia, *Delile* (Cassia lanceolata, *Nectoux*); *Bentl. and Trim. Med. Pl.* vol. ii. plate 90. It is imported from Alexandria and sometimes in a more or less contaminated condition, in which case the true senna leaflets should be carefully separated from all extraneous matters. E + C Africa.

Characters.—About three-quarters of an inch to more than an inch long, lanceolate or oval-lanceolate, acute, unequal at the base, entire, thin, brittle, pale yellowish-green, evidently veined on the lower surface, and very finely pubescent or nearly smooth. Odour peculiar, faint, tea-like; taste mucilaginous, nauseous, and sickly

Preparations.

Confectio Sennæ . . .	1 part in 11, about
Infusum Sennæ . . .	2 ounces to 1 pint
Mistura Sennæ Composita	
Pulvis Glycyrrhizæ Compositus	1 part in 6
Syrupus Sennæ . . .	1 ounce to 2 fluid ounces
Tinctura Sennæ . . .	2½ ounces to 1 pint

C.C. Chrysoretin, Phaeoretin, Sennacrol, Sennapicrin, cathartic acid, senna mucilage.

SENNA INDICA.

East Indian Senna.

Synonym.—Tinnivelly Senna.

The dried leaflets of Cassia angustifolia, *Vahl* (Cassia elongata, *Lem-Lisanc*); *Royle, Ill. Bot. Himal.* plate 37. From plants cultivated in Southern India; it is imported without admixture of other leaves or extraneous matters of any kind. Hab. E. Africa to India.

Characters.—From about one inch to two inches in length, lanceolate, acute, unequal-sided at the base, thin, entire, yellowish-green and smooth above, somewhat duller beneath, and glabrous or slightly pubescent. Odour and taste very similar to Alexandrian Senna.

On the whole this is a broader leaf than the Alex.

Preparations.

May be used in place of Alexandrian Senna.

SERPENTARIÆ RHIZOMA.

Serpentary Rhizome.

Synonym.—Serpentariæ Radix. N.O. Aristolochiaceæ.

The dried rhizome and rootlets of Aristolochia Serpentaria, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 246; or of Aristolochia reticulata, *Nutt.*

Indigen to U.S. Virginia

Characters.—Rhizome twisted, about one inch long and one-eighth of an inch in diameter, marked above by the remains of former stems, and giving off below an interlacing tuft of numerous slender branched rootlets, of from two to four inches long; dull yellowish-brown. Odour aromatic, peculiar, camphoraceous; taste bitterish, aromatic, and somewhat camphoraceous.

The rhizome and rootlets of *Aristolochia reticulata* agree essentially with the above, but the rhizome is a little thicker, and the rootlets longer, coarser, and less matted together. Texas.

C.C. a bitter principle Serpentarin; ·5% essential oil; Tannin; a peculiar sugar & a resin

Preparations.

Infusum Serpentariæ . . .	½ ounce to 1 pint
Tinctura Cinchonæ Composita .	½ ounce to 1 pint
" Serpentariæ . . .	2½ ounces to 1 pint

SEVUM PRÆPARATUM.

Prepared Suet.

Ruminantia

Fam: Bovidæ.

The internal fat of the abdomen of the sheep, Ovis Aries, *Linn.*, purified by melting and straining.

Characters.—White, smooth, almost scentless; fusible at 103° F. (39°·4 C.)

Preparations.

Emplastrum Cantharidis | Unguentum Hydrargyri

P.C. stearin + palmitin; little olein + hircin.

SINAPIS.

Mustard.

Black Mustard seeds and White Mustard seeds powdered and mixed.

Characters and Test.—A greenish-yellow powder of an acrid bitterish oily pungent taste, scentless when dry, but exhaling when moist a pungent penetrating peculiar odour, very irritating to the nostrils and eyes. A decoction cooled is not made blue by tincture of iodine.

Preparations.

Cataplasma Sinapis | Charta Sinapis
Oleum Sinapis (from black seeds).

SINAPIS ALBÆ SEMINA.

White Mustard Seeds.

N.O. Cruciferæ.

The dried ripe seeds of Brassica alba, *Hook. fil. and Thomp.* (Sinapis alba, *Linn.*); *Bentl. and Trim. Med. Pl.* vol. i. plate 23. From plants cultivated in Britain.

Asia + S. Europe.

Characters.—About one-twelfth of an inch in diameter, roundish, pale yellow, very finely pitted, hard; internally yellow, oily. Inodorous; taste pungent.

Preparation.—Sinapis.

Free from starch

P.C. 20-25% fixed oil
lecithin mucilage (in testa)
myrosin + other protids Sinalbin

SINAPIS NIGRÆ SEMINA.

Black Mustard Seeds.

The dried ripe seeds of Brassica nigra, *Koch* (Sinapis nigra, *Linn.*); *Bentl. and Trim. Med. Pl.* vol. i. plate 22. From plants cultivated in Britain.

Characters.—Scarcely half the size of white mustard seeds, or not more than about one twenty-fifth of an inch in diameter; roundish, dark reddish- or greyish-brown, finely pitted, hard; internally yellow. Inodorous when dry, even when powdered, but when triturated with water exhaling a strong pungent odour so as to affect the eyes; taste very pungent.

No starch.

Preparations.

Sinapis | Oleum Sinapis

P.C. 25% Fixed Oil
mucilage (in testa)
lecithin myrosin –
other protids Sinigrin.

SODA CAUSTICA.

Caustic Soda.

Synonyms.—Sodæ Hydras; Hydrate of Soda.

Hydrate of Sodium, NaHO, with some impurities.

Take of

Solution of Soda . . . . . 2 pints

Boil down the solution of soda rapidly in a silver or clean iron vessel, until there remains a fluid of oily consistence, a drop of which when removed on a warmed glass rod solidifies on cooling. Pour the fluid on a clean silver or iron plate, or into moulds, and, as soon as it has solidified, break it into pieces, and preserve it in stoppered green-glass bottles.

Characters and Tests.—Hard and greyish-white, very alkaline and corrosive. It imparts a yellow colour to flame, and its solution in water acidulated with nitric acid gives only scanty white precipitates with nitrate of silver and chloride of barium. Forty grains dissolved in water leaves scarcely any sediment, and requires for neutralisation about 900 grain-measures of the volumetric solution of oxalic acid.

1c.c. $\frac{N}{2}$ oxalic acid
= ·040 grm NaHO.

Preparation containing Caustic Soda.

// Liquor Sodæ . . 18·8 grains in 1 fluid ounce

SODA TARTARATA.

Tartarated Soda.

$NaKC_4H_4O_6,4H_2O$.

Synonyms.—Sodæ et Potassæ Tartras; Sodæ Potassio-tartras; Tartrate of Potassium and Sodium; Rochelle Salt.

Take of

Acid Tartrate of Potassium, in powder	16 ounces, or a sufficiency
Carbonate of Sodium	12 ounces, or a sufficiency
Boiling Distilled Water . . .	4 pints

Dissolve the carbonate of sodium in the water, add gradually the acid tartrate of potassium, and, if after being boiled for a few minutes the liquid has an acid or alkaline reaction, add a little carbonate of sodium or acid tartrate of potassium till a neutral solution is obtained. Boil and filter; concentrate the liquor till a pellicle forms on the surface, and set it aside to crystallise. More crystals may be obtained by again evaporating as before. $2KHC_4H_4O_6 + Na_2CO_3 + 7H_2O = 2(KNaC_4H_4O_6 \cdot 4H_2O)$.

Characters and Tests.—In colourless transparent prisms or halves of prisms of the right rhombic order, generally eight-sided; tasting like common salt. Heated with sulphuric acid it blackens, evolving inflammable gases and the odour of burnt sugar. It imparts a yellow colour to flame. A strong solution gives a crystalline precipitate with a small quantity of acetic acid. Entirely soluble in cold water. 141 grains heated to redness till gases cease to be evolved, leaves an alkaline residue which, when treated with distilled water, filtered, and well washed, yields a clear solution requiring for neutralisation 990 grain-measures of the volumetric solution of oxalic acid.

Dose.—¼ to ½ ounce. 1 C.C. $\frac{N}{2}$ ox. acid = ·141 grm $KNaC_4H_4O_6 \cdot 4H_2O$.

SODII ARSENIAS.

Arseniate of Sodium.

$Na_2HAsO_4,12H_2O$; and $Na_2HAsO_4,7H_2O$.

Synonyms.—Sodæ Arsenias; Arseniate of Soda.

Take of

Arsenious Acid	10 ounces
Nitrate of Sodium	8½ ounces
Dried Carbonate of Sodium . . .	5½ ounces
Boiling Distilled Water	35 ounces

Reduce the dry ingredients separately to fine powder, and mix them thoroughly in a mortar. Put the mixture into a large clay crucible, and cover it with the lid. Expose the crucible to a full red heat, till all effervescence has ceased and complete fusion has taken place. Pour out the fused salt on a clean flagstone, and as soon as it has solidified, and while it is still warm, put it into the boiling water, stirring diligently. When the salt has dissolved, filter the solution through paper and set it aside to crystallise.

Drain the crystals, dry them rapidly by exposure on filtering paper, and enclose them in stoppered bottles.

Characters and Tests.—In colourless transparent prisms soluble in water; the solution is alkaline, giving white precipitates with chloride of barium, chloride of calcium, and sulphate of zinc, and a brick-red precipitate with nitrate of silver, all of which are soluble in nitric acid. When freshly crystallised, arseniate of sodium has the composition expressed by the formula $Na_2HAsO_4,12H_2O$; this salt loses 53·73 per cent. of its weight when dried at 300° F. (148°·9 C.), becoming anhydrous. On exposure of the ordinary salt, moisture escapes, the effloresced salt having the formula $Na_2HAsO_4,7H_2O$. The

$As_2O_3 + 2NaNO_3 + Na_2CO_3 = Na_4As_2O_7 + N_2O_3 + CO_2$.

$Na_4As_2O_7 + 15H_2O = 2Na_2HAsO_4 \cdot 7H_2O$.

latter salt loses 40·38 per cent. of its weight when dried at 300° F. (148°·9 C.), becoming anhydrous. An aqueous solution of 12·4 grains of anhydrous arseniate of sodium, acidulated with acetic acid, requires not less than 34 grains of acetate of lead for complete precipitation.

Dose.—$\frac{1}{16}$ to $\frac{1}{8}$ grain.

Preparation.

Liquor Sodii Arseniatis { 7·5 grains or / 4·5 grains dried } in 1 fluid ounce

3grs Sod Bic with 1gr P. Zingib can be made into a very workable mass with 1gr of tragacanth + water or mucilage q. s.

SODII BICARBONAS.

Bicarbonate of Sodium.

Synonyms.—Sodæ Bicarbonas; Bicarbonate of Soda.

$NaHCO_3$.

“ A salt obtained by saturating carbonate of sodium with carbonic acid, or by reaction of chloride of sodium and bicarbonate of ammonium.

Characters and Tests.—In powder or small opaque irregular scales, white, of a saline not unpleasant taste. Imparts a yellow colour to flame. Dissolves with much effervescence in diluted hydrochloric acid, forming a solution in which perchloride of platinum causes no precipitate. A solution of the salt in cold water gives a white and not a coloured precipitate with solution of perchloride of mercury. When supersaturated with nitric acid its solution scarcely precipitates with chloride of barium or nitrate of silver. Eighty-four grains exposed to a red heat leaves fifty-three of an alkaline residue, which requires for neutralisation 1000 grain-measures of the volumetric solution of oxalic acid. 1 C.C = ·084 grm $NaHCO_3$.

Absence of neutral carbonate.

20 grains of Bicarbonate of Sodium } neutralise { 16·7 grains of Citric Acid, or / 17·8 grains Tartaric Acid

Dose.—10 to 60 grains.

Preparations containing Bicarbonate of Sodium.

Liquor Sodæ Effervescens . .	30 grains in 1 pint
Sodii Citro-tartras Effervescens .	17 parts in 31
Trochisci Sodii Bicarbonatis .	5 grains in each lozenge

SODII BROMIDUM.

Bromide of Sodium.

$NaBr$.

This salt may be obtained by the process described in connection with bromide of potassium, solution of soda being used in place of solution of potash, and crystallisation being conducted from warm solutions. Cryst.d from cold water has formula $NaBr\,2H_2O$.

Above 60°C

Characters and Tests.—A granular white powder consisting of small monoclinic crystals, somewhat deliquescent, inodorous, with a saline taste, readily soluble in less than twice its weight of water, much less soluble in spirit. It imparts an intense yellow colour to flame. When its aqueous solution is mixed with a little chlorine water, and shaken with chloroform, the latter, on falling to the bottom of the fluid, exhibits a red colour. Ten grains of the dry salt requires for complete decomposition about 960 grain-measures of the volumetric solution of nitrate of silver. A solution of the salt mixed with mucilage of starch and a drop of an aqueous solution of chlorine or of bromine does not exhibit any blue colour.

$6NaOH + 3Br_2 = 5NaBr + NaBrO_3 + 3H_2O$.

Dose.—10 to 30 grains.

$NaBrO_3 + 3C = NaBr + 3CO$.

$\left.\begin{matrix} 1\,c.c. \\ \frac{N}{10}\,AgNO_3 \end{matrix}\right\} = {\cdot}0103$ grm $NaBr$.

SODII CARBONAS.

Carbonate of Sodium.

Obtained pure by ignition of $NaHCO_3$.

Synonyms.—Sodæ Carbonas; Carbonate of Soda.

$Na_2CO_3,10H_2O$.

…ia & CO_2 gas are passed into
…n of common salt $NaHCO_3$
…d is con-
…into Na_2CO_3
…+
…red
…H_4Cl
…tion
…e.

This salt is commonly obtained from chloride of sodium, either by reaction with bicarbonate of ammonium and subsequent ignition, or by conversion into sulphate and action of heat on a mixture of the sulphate with carbon and carbonate of calcium.

$NH_4HCO_3 + NaCl = NaHCO_3 + NH_4Cl$

$2NaHCO_3 = Na_2CO_3 + H_2O + CO_2$

$Na_2CO_3 + 10H_2O = Na_2CO_3 \cdot 10H_2O$

$Na_2SO_4 + CaCO_3 + 2C_2 = Na_2CO_3 + CaS + 4CO$.

Characters and Tests.—In transparent colourless laminar crystals of a rhombic shape, efflorescent, with a harsh alkaline taste and strong alkaline reaction. It imparts a yellow colour to flame, and dissolves with effervescence in diluted hydrochloric acid, forming a solution which does not precipitate with perchloride of platinum. By heat it undergoes aqueous fusion, and then dries up, losing sixty-three per cent. of its weight. When supersaturated with nitric acid it precipitates only slightly with chloride of barium or nitrate of silver. One hundred and forty-three grains requires for neutralisation at least 960 grain-measures of the volumetric solution of oxalic acid. 1 c.c. $\frac{N}{2}$ Oxalic acid = ·143 grm $Na_2CO_3 \cdot 10H_2O$
·053 grm Na_2CO_3

20 grains of Carbonate of Sodium } neutralise { 9·8 grains Citric Acid, or
10½ grains Tartaric Acid

Dose.—5 to 30 grains.

Preparations for which Carbonate of Sodium is used.

Liquor Sodæ
,, ,, Chlorinatæ
Soda Tartarata
Sodii Arsenias
Sodii Bicarbonas
,, Carbonas Exsiccata
,, Hypophosphis
,, Phosphas
Sodii Sulphocarbolas

SODII CARBONAS EXSICCATA.

Dried Carbonate of Sodium.

Na_2CO_3.

Synonyms.—Sodæ Carbonas Exsiccata; Dried Carbonate of Soda.

Take of	
Carbonate of Sodium	8 ounces

Expose the carbonate of sodium in a porcelain capsule to heat applied gently until the crystals crumble to powder; then increase the temperature and continue the action until vapours cease to be evolved. The product weighs about three ounces. Having rubbed it to powder, enclose it in a stoppered bottle.

Dose.—3 to 10 grains.

SODII CHLORIDUM.

Chloride of Sodium. Common Salt.

NaCl.

If to a saturated solution
pure HCl be added
NaCl crystallizes out
perfectly pure.

Characters and Tests.—In small white crystalline grains, or transparent cubic crystals, free from moisture, has a purely saline taste, imparts a yellow colour to flame, is soluble in water. The solution is not precipitated by perchloride of platinum, but gives with nitrate of silver a white precipitate soluble in ammonia, but insoluble in nitric acid.

Preparations for which Chloride of Sodium is used.

Acidum Hydrochloricum
Hydrargyri Perchloridum
Hydrargyri Subchloridum
Sodii Carbonas

SODII CITRO-TARTRAS EFFERVESCENS.

Effervescent Citro-tartrate of Sodium.

Synonyms.—Sodæ Citro-tartras Effervescens; Effervescent Citro-tartrate of Soda.

Take of

Bicarbonate of Sodium, in powder	17 ounces	. or .	17 parts
Tartaric Acid, in powder . .	9 ounces	. ,, .	9 parts
Citric Acid, in powder . . .	6 ounces	. ,, .	6 parts
Refined Sugar, in powder . .	5 ounces	. ,, .	5 parts

Mix the powders thoroughly, place them in a dish or pan of suitable form heated to between 200° and 220° F. (93°·3 and 104°·4 C.), and when the particles of the powder begin to aggregate, stir them assiduously until they assume a granular form; then, by means of suitable sieves, separate the granules of uniform and most convenient size, and preserve the preparation in well-closed bottles.

Dose.—60 grains to ¼ ounce.

$K_2Mn_2O_8 = K_2O + 2MnO + 5O$ ∴ $2NaPH_2O_2 + 2O_2 = Na_2HPO_4 + H_3PO_4$

∴ $\frac{10\ NaPH_2O_2}{880} = \frac{4\ K_2Mn_2O_8}{126.4}$

$5.8 = 12.64.$

SODII HYPOPHOSPHIS.

Hypophosphite of Sodium.

Synonyms.—Sodæ Hypophosphis; Hypophosphite of Soda.

$NaPH_2O_2$.

Obtained by adding carbonate of sodium to solution of hypophosphite of calcium as long as a precipitate of carbonate of calcium is formed, then filtering the solution and evaporating it to dryness by the heat of a steam-bath, keeping it constantly stirred when the salt begins to solidify.

Characters and Tests.—A white granular salt, having a bitter nauseous taste. It is deliquescent, very soluble in water and in spirit, but insoluble in ether. At a red heat it ignites, emitting spontaneously inflammable phosphuretted hydrogen. It is rapidly attacked by oxidising agents. Its solution yields with nitrate of silver a white precipitate which rapidly darkens in colour. Its solution does not effervesce with acids, does not give a precipitate with acetate of lead, nor more than a slight cloudiness with oxalate of ammonium. Five grains dissolved in half an ounce of distilled water, and the solution boiled for ten minutes with eleven and a half grains of permanganate of potassium and filtered, should afford a nearly colourless solution.

absence of phosphate + phosphite *

* vide supra.

Dose.—5 to 10 grains.

99% real hypophosphite.

$Ca(PH_2O_2)_2 + Na_2CO_3 = 2NaPH_2O_2 + CaCO_3.$

SODII IODIDUM.

Iodide of Sodium.

NaI.

This salt may be obtained by the process described in connection with iodide of potassium, solution of soda being used in place of solution of potash.

$6NaOH + 3I_2 = 5NaI + NaIO_3 + 3H_2O$

$NaIO_3 + 3C = NaI + 3CO$

Characters and Tests.—A dry white crystalline deliquescent powder having a saline and somewhat bitter taste. It is readily soluble in water and in spirit. The aqueous solution is neutral to litmus, and when mixed with mucilage of starch yields a blue colour on the addition of a little chlorine water. It imparts an intense yellow colour to flame. The addition of tartaric acid and mucilage of starch to its aqueous solution does not develope a blue colour. Solution of nitrate of silver added in excess affords a yellowish-white precipitate which when shaken with diluted solution of ammonia yields by subsidence a clear liquid in which excess of nitric acid causes very little turbidity. Its aqueous solution is only faintly precipitated by the addition of saccharated solution of lime. Ten grains requires for complete precipitation about 660 grain-measures of the volumetric solution of nitrate of silver.

Absence of iodate.

Absence of carbonates.

Dose.—3 to 10 grains.

1 C.C. N/10 $AgNO_3$ = ·015 grm NaI.

SODII NITRAS.

Nitrate of Sodium.

Synonyms.—Sodæ Nitras; Nitrate of Soda.

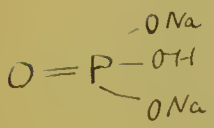
$NaNO_3$.

A native salt, purified by crystallisation from water.

Characters and Tests.—In colourless obtuse rhombohedral crystals, having a cooling saline taste. Thrown on the fire it deflagrates; warmed in a test-tube with sulphuric acid and copper wire, it evolves ruddy fumes. It is soluble in about two parts of cold distilled water. The solution gives only a faint precipitate with nitrate of silver or chloride of barium.

Preparation for which Nitrate of Sodium is used.

Sodii Arsenias



$O=P(ONa)(OH)(ONa)$

SODII PHOSPHAS.

Phosphate of Sodium.

Synonyms.—Sodæ Phosphas; Phosphate of Soda.

$Na_2HPO_4,12H_2O$.

This salt may be obtained by adding a solution of carbonate of sodium to a solution of acid phosphate of calcium prepared from a mixture of bone-ash and sulphuric acid. $2Na_2CO_3 + CaH_4(PO_4)_2 + 23H_2O = 2(Na_2HPO_4 \cdot 12H_2O) + CaCO_3 +$

Characters and Tests.—In transparent colourless rhombic prisms, terminated by four converging planes, efflorescent, tasting like common salt. It imparts a yellow colour to flame. Its solution has a faintly alkaline reaction, it gives a yellow precipitate with nitrate of silver, the resulting fluid acquiring an acid reaction. Heated to dull redness it loses sixty-three per cent. of its weight, leaving a residue, which, when dissolved in water, gives with chloride of barium a precipitate almost entirely soluble in diluted nitric acid.

Dose.—$\frac{1}{4}$ to 1 ounce.

Preparations for which Phosphate of Sodium is used.

Ferri Phosphas	Syrupus Ferri Phosphatis

SODII SALICYLAS.

Salicylate of Sodium.

Synonyms.—Sodæ Salicylas; Salicylate of Soda.

$(NaC_7H_5O_3)_2,H_2O$.

Obtained by the action of salicylic acid on carbonate of sodium or on caustic soda.

Characters and Tests.—Small colourless, or nearly colourless, crystalline scales, inodorous, and having a sweetish saline taste. Slightly but completely soluble in alcohol, readily soluble in water. The solutions are neutral or faintly acid to litmus. When ignited, the salt evolves inflammable vapours, and a white residue remains which effervesces with

$HC_7H_5O_3 + NaOH = NaC_7H_5O_3 \cdot H_2O.$

acids and imparts an intense yellow colour to flame. Perchloride of iron colours a concentrated solution reddish-brown, and a dilute solution violet. If the aqueous solution be acidulated by nitric acid and the precipitate be dissolved by rectified spirit, the mixture is not rendered more than faintly opalescent by chloride of barium or nitrate of silver. It dissolves without coloration or effervescence in cold sulphuric acid. > absence of abnormal organic matter.

Dose.—10 to 30 grains.

SODII SULPHAS.

Sulphate of Sodium.

Synonyms.—Sodæ Sulphas; Sulphate of Soda; Glauber's Salt.

$Na_2SO_4,10H_2O$.

May be obtained from the residue left in the manufacture of hydrochloric acid from chloride of sodium, by neutralising it with carbonate of sodium, and crystallising from solution in water. $2NaHSO_4 + Na_2CO_3 + 17H_2O = 2(Na_2SO_4 \cdot 10H_2O) + CO_2$.

Characters and Tests.—In transparent oblique prisms; has a salt and bitter taste; effloresces on exposure to the air; is soluble in water, insoluble in spirit. Exposed to heat in a porcelain crucible it loses 55·9 per cent. of water. Heated with solution of potash no odour of ammonia is evolved, and no precipitate is formed. Imparts a yellow colour to flame. [illegible] One hundred grains of it dissolved in distilled water and acidulated with hydrochloric acid, gives, by the addition of chloride of barium, a white precipitate, which, when it has been washed and dried, weighs 72·2 grains.

Dose.—¼ to 1 ounce.

SODII SULPHIS.

Sulphite of Sodium.

Synonyms.—Sodæ Sulphis; Sulphite of Soda.

$Na_2SO_3,7H_2O$.

Obtained by the action of sulphurous acid on carbonate of sodium or on caustic soda.

$Na_2CO_3 + H_2SO_3 + 6H_2O = Na_2SO_3 \cdot 7H_2O + CO_2$

Characters and Tests.—Colourless transparent monoclinic prisms, efflorescent in dry air, inodorous, with a cooling saline and sulphurous taste. It is readily soluble in water, very sparingly in spirit. The aqueous solution has a neutral or faintly alkaline reaction, imparts an intense yellow colour to flame, and if treated with hydrochloric acid evolves a sulphurous vapour, but does not become cloudy. Absence of Thiosulphate.

Dose.—5 to 20 grains.

SODII SULPHOCARBOLAS.

Sulphocarbolate of Sodium.

Synonyms.—Sodæ Sulphocarbolas; Sulphocarbolate of Soda.

$$NaC_6H_5SO_4,2H_2O.$$

Obtained by dissolving carbolic acid in excess of sulphuric acid, supersaturating the liquid with carbonate of barium, filtering, and treating the filtrate with carbonate of sodium until no further precipitate forms. The filtrate from this mixture yields crystals of sulphocarbolate of sodium on evaporation.

Characters and Tests.—Colourless transparent rhombic prisms, inodorous or nearly so, with a cooling saline and somewhat bitter taste. Readily soluble in water, less so in spirit, the solutions being neutral to litmus. On ignition it gives vapours of carbolic acid and leaves a residue the solution of which in water affords a white precipitate with chloride of barium insoluble in hydrochloric acid. It imparts an intense yellow colour to flame. The dilute aqueous solution is rendered violet by solution of perchloride of iron; it should not at once be rendered turbid by chloride of barium.

Dose.—10 to 15 grains.

$$C_6H_5 \cdot OH + H_2SO_4 = C_6H_4(OH)(SO_3)H + H_2O.$$

$$3H_2O + 2C_6H_4 \cdot OH \cdot SO_3H + Na_2CO_3 = 2(C_6N_4 O Na SO_3H \cdot 2H_2O) + CO_2$$

$2(K_2CrO_4 \cdot CrO_3) + 8 H_2SO_4 = 2(K_2SO_4 \cdot Cr_2(SO_4)_3) + 8H_2O + 3O_2$.
(Chrome alum)

$C_5H_{11}OH + O_2 = HC_5H_9O_2 + OH_2$
$2 C_5H_{11}OH + O_2 = C_5H_{11}C_5H_9O_2 + 2OH_2$
$HC_5H_9O_2 + NaHO = NaC_5H_9O_2 + H_2O$
$C_5H_{11}C_5H_9O_2 + NaOH = NaC_5H_9O_2 + C_5H_{11}OH$.

SODII VALERIANAS.

Valerianate of Sodium.

$NaC_5H_9O_2$.

Take of

Amylic Alcohol	4 fluid ounces
Bichromate of Potassium	9 ounces
Sulphuric Acid	6½ fluid ounces
Solution of Soda	a sufficiency
Water	½ gallon

Dilute the sulphuric acid with ten fluid ounces of the water, and dissolve the bichromate of potassium in the remainder of the water with the aid of heat. When both liquids are cold, mix them with the amylic alcohol in a retort or flask, with occasional brisk agitation, until the temperature of the mixture has fallen to about 90° F. (32°·2 C.) Connect with a condenser, and distil until about half a gallon of liquid has passed over. Saturate the distilled liquid accurately with the solution of soda, remove any oily fluid which floats on the surface, evaporate till watery vapour ceases to escape, and then raise the heat cautiously so as to liquefy the salt. When the product has cooled and solidified, break it into pieces, and immediately put it into a stoppered bottle.

Valerianate of Amyl.

Characters.—In dry white masses without alkaline reaction, entirely soluble in rectified spirit, and giving out a powerful odour of valerian on the addition of diluted sulphuric acid.

Absence of free soda or carbonate.

Dose.—1 to 5 grains.

Preparation for which Valerianate of Sodium is used.
Zinci Valerianas

SODIUM.

Sodium.

The metallic element sodium as met with in commerce. It should be preserved in well-stoppered bottles under mineral naphtha.

Characters and Tests.—A soft metal, rapidly oxidising in the air, but showing a bright metallic surface when freshly cut. It attacks water or alcohol with evolution of hydrogen gas, little or no insoluble matter remaining. Twenty-three grains, cautiously dissolved in water, requires for neutralisation at least 975 grain-measures of the volumetric solution of
95·7 % oxalic acid. 1cc $\frac{N}{2}$ = ·023 grm Na.

Preparation.—Liquor Sodii Ethylatis.

Preparations containing Sodium or its Compounds.

Borax
Cataplasma Sodæ Chlorinatæ
Emplastrum Belladonnæ
,, Calefaciens
,, Opii
,, Resinæ
,, Saponis
,, ,, Fuscum
Extractum Colocynthidis Compositum
Fel Bovinum Purificatum
Linimentum Opii
,, Potassii Iodidi cum Sapone
,, Saponis
Liquor Sodæ
,, ,, Chlorinatæ
,, ,, Effervescens
,, Sodii Arseniatis
,, ,, Ethylatis
Pilula Aloes Barbadensis
,, ,, et Asafœtidæ
,, Aloes Socotrinæ
,, Cambogiæ Composita
,, Phosphori
Pilula Rhei Composita
,, Saponis Composita
,, Scammonii Composita
,, Scillæ Composita
Sapo Animalis
,, Durus
Soda Caustica
,, Tartarata
Sodii Arsenias
,, Bicarbonas
,, Bromidum
,, Carbonas
,, ,, Exsiccata
,, Chloridum
,, Citro-tartras Effervesc.
,, Hypophosphis
,, Iodidum
,, Nitras
,, Phosphas
,, Salicylas
,, Sulphas
,, Sulphis
,, Sulphocarbolas
,, Valerianas
Trochisci Sodii Bicarbonatis
Suppositoria Acidi Carbolici cum Sapone
,, ,, Tannici ,, ,,
,, Morphinæ ,, ,,

The term "spirit" in the B. P. sense is applied to an alcoholic solution of a volatile substance; most of the official spirits are simple solutions of volatile oils, but others are distilled.

SPIRITUS ÆTHERIS.

Spirit of Ether.

1 in 3.

Ether	10 fluid ounces
Rectified Spirit	1 pint

Mix.

Test.—Specific gravity 0·809.

Dose.—30 to 90 minims.

Preparation.—Tinctura Lobeliæ Ætherea.

SPIRITUS ÆTHERIS COMPOSITUS.

Oil of wine.

Compound Spirit of Ether.

Consists of
$(C_2H_5)_2SO_4$ Ethyl sulphate
$C_2H_4SO_3$ Ethylene sulphite.

Synonym.—Hoffmann's Anodyne.

Gradually mix thirty-six fluid ounces of sulphuric acid with forty fluid ounces of rectified spirit, and let the mixture stand for twenty-four hours. Then distil until the fluid in the retort begins to blacken. Shake the distillate with lime-water to neutralise any acid, and remove the supernatant liquor and expose it to the air for about twelve hours.(1) Pour three fluid drachms of the resulting liquid into a mixture of eight fluid ounces of ether and sixteen fluid ounces of rectified spirit.

SO_3

(1) To allow ether to evaporate.

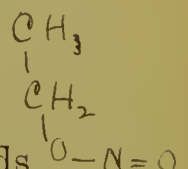
Dose.—30 minims to 2 fluid drachms.

Heated with KOH evolves olefiant gas.

SPIRITUS ÆTHERIS NITROSI.

Spirit of Nitrous Ether.

Synonym.—Spiritus Ætheris Nitrici.



$CH_3-CH_2-O-N=O$

A spirituous solution containing nitrous compounds, aldehyd, and other substances. It may be obtained as follows :—

The liquid in the retort boils between 78° & 82°C. This is a long way below the boiling point of a mixture of alcohol, nitric & H_2SO_4, but as ethyl nitrite is formed at this temp: & the boiling point of the pure substance is 16°C, then at the high temp (78–82°C) its vapour pressure is sufficient to overcome that of the atmosphere & the liquid boils.

The reason for reserving small portion of the HNO the last is to prevent formation of oil of wine &c & to ensure the distillation of nitrite only

The principal action takes place between the $HNO_3 + C_2H_5OH$, the Cu being only a contributory source. Further evidence is found in the presence of a considerable quantity of aldehyde in the distillate.

Take of

Nitric Acid	3 fluid ounces
Sulphuric Acid	2 fluid ounces
Copper, in fine wire (about No. 25)	2 ounces
Rectified Spirit	a sufficiency

To one pint of the spirit add gradually the sulphuric acid, stirring them together; then add, in the same way, two and a half fluid ounces of the nitric acid. Put the mixture into a retort or flask, into which the copper has been introduced, and to which a thermometer is fitted. Attach now an efficient condenser, and applying heat gently, let the spirit distil at a temperature commencing at 170° F. (76°·7 C.)″ and rising to 175° F. (79°·4 C.), but not exceeding 180° F.′ (82°·2 C.), until twelve fluid ounces have passed over and been collected in a bottle, the latter and the condenser being kept cool with ice-cold water; then withdraw the heat, and having allowed the contents of the retort to cool, introduce the remaining half-ounce of nitric acid, and resume the distillation as before, until the distilled product has been increased to fourteen fluid ounces. Mix this with two pints of the rectified spirit or as much as will make the product correspond to the nitric oxide test alluded to in the following paragraph. Preserve the product in thoroughly well-closed vessels.

above this temp: oil of wine would distil over & the vapour of ethyl nitrite would explode.

There remains in the retort more than $\frac{7}{8}$ of the Cu with H_2SO_4, $CuSO_4$ a little HNO_3 & oxalic acid produced by the action of HNO_3 on C_2H_5OH

Characters and Tests.—Transparent and nearly colourless, with a very slight tinge of yellow, mobile, inflammable, of a peculiar penetrating apple-like odour, and sweetish cooling sharp taste. Specific gravity 0·840 to 0·845. It does not effervesce, or only feebly, when shaken with a little bicarbonate of sodium. When agitated in a test-tube with a strong solution of sulphate of iron, if a few drops of strong sulphuric acid are then poured down the side of the tube, a deep olive-brown or black zone is produced, widening as the tube is gently shaken. Tested as described in the 'Pharmaceutical Journal,' 3rd series, vol. xiii. page 63; or vol. xv. p. 101; or vol. xv. p. 673, it should yield, at the ordinary temperature (60° F., 15°·5 C.) and pressure (30 inches or 760 millimetres of mercury), and when freshly prepared, seven times its volume of nitric oxide gas; and even after it has been kept some time

$$3HNO_3 + Cu = HNO_2 + Cu(NO_3)_2 + H_2O$$

$$C_2H_5\text{-}OH + HNO_2 = C_2H_5\text{-}NO_2 + H_2O$$

$$C_2H_5\text{-}OH + HNO_3 = C_2H_4O + H_2O + HNO_2.$$

$$\text{Estimation}\begin{cases} KI + H_2SO_4 = KHSO_4 + HI \\ C_2H_5\text{-}NO_2 + HI = C_2H_5\text{-}OH + I + NO \end{cases}$$

Æth: Nit: The HNO_3 acts on the Cu producing $HNO_2 + Cu(NO_3)_2$. The HNO_2 combines with the alcohol forming nitrous ether. The H_2SO_4 mposes the $Cu(NO_3)_2$ forming nascent $HNO_3 + CuSO_4$. The HNO_3 reacts on the hol producing $C_2H_4O + HNO_2$ which again forms nitrous ether. ($C_2H_5NO_2$) hief reaction lies between the HNO_3 + the alcohol.

$$C_2H_5OH + 5HNO_3 - 5HNO_2 + \frac{1}{2}C_2O_4 + 2H_2O$$

HNO_2 then reacts on alcohol.

and the vessel containing it has occasionally been opened, it should yield not much less than five times its volume of the gas.

Dose.—½ to 2 fluid drachms.

SPIRITUS AMMONIÆ AROMATICUS.

Aromatic Spirit of Ammonia.

Synonyms.—Spiritus Ammoniæ Compositus; Sal Volatile.

Take of

Carbonate of Ammonium	4 ounces
Strong Solution of Ammonia	8 fluid ounces
Volatile Oil of Nutmeg	4½ fluid drachms
Oil of Lemon	6½ fluid drachms
Rectified Spirit	6 pints
Water	3 pints

Place the oils of lemon and nutmeg and rectified spirit with the water in a retort; distil seven pints, and then distil and separately collect an additional nine fluid ounces. Place the nine ounces of distillate, together with the carbonate of ammonium and the strong solution of ammonia, in a bottle holding rather more than a pint. Securely cork the bottle and gently warm it in a water-bath to 140° F. (60° C.), shaking from time to time until all the salt has dissolved. Filter if necessary, when cold, through a little cotton wool, and gradually mix it with the seven pints of distilled spirit. The product should measure one gallon. 1¼ % Ammonia gas (NH_3)
Nearly 3½ % neutral carbonate Am:

Tests.—Specific gravity 0·896. One fluid ounce requires for neutralisation 558 grain-measures of the volumetric solution of oxalic acid. One fluid ounce, after the addition of 330 grain-measures of the test solution of chloride of barium, should yield, after filtration, a further precipitate when more of the reagent is added. Yields 2½ % of total NH_3

Dose.—½ to 1 fluid drachm. 1 c.c. $\frac{N}{2}$ ac } = ·017 grm NH_3.

Preparations.

Tinctura Guaiaci Ammoniata
" Valerianæ Ammoniata

: Ammon: Fort: is used to convert the Ammon Carb into neutral carbonate $_3H_{11}C_2O_5 + NH_4OH = 2(NH_4)_2CO_3$. Excess of ammonia is used to give the pirit pungency. This reaction does not take place until the mperature indicated (140° F) is reached.

SPIRITUS AMMONIÆ FŒTIDUS.

Fetid Spirit of Ammonia.

Take of

Asafœtida	1½ ounce
Strong Solution of Ammonia	2 fluid ounces
Rectified Spirit	a sufficiency

Break the asafœtida into small pieces, and macerate it, in a closed vessel, in fifteen fluid ounces of the spirit for twenty-four hours, then distil off the spirit, mix the product with the solution of ammonia, and add sufficient rectified spirit to make one pint.

Test.—Specific gravity about 0·847.

Dose.—½ to 1 fluid drachm.

SPIRITUS ARMORACIÆ COMPOSITUS.

Compound Spirit of Horseradish.

Take of

Horseradish Root, scraped	of each 20 ounces
Bitter-Orange Peel, cut small and bruised	
Nutmeg, bruised	½ ounce
Proof Spirit	1 gallon
Water	3 pints

Mix, and distil a gallon.

Test.—Specific gravity about 0·920.

Dose.—1 to 2 fluid drachms.

SPIRITUS CAJUPUTI.

Spirit of Cajuput.

Take of

Oil of Cajuput	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose.—½ to 1 fluid drachm.

SPIRITUS CAMPHORÆ.

Spirit of Camphor.

Take of

Camphor	1 ounce
Rectified Spirit	9 fluid ounces

Dissolve.

Test.—Specific gravity about 0·850.

Dose.—10 to 30 minims.

Ether Chloricus Lon: Hosp:
Chloroform ℥i
S.V.R. ad ℥x
Dose 5-20 m.

SPIRITUS CHLOROFORMI.

Spirit of Chloroform.

Synonyms.—Chloric Ether; Spirit of Chloric Ether.

Take of

Chloroform	1 fluid ounce
Rectified Spirit	19 fluid ounces

Dissolve.

Test.—Specific gravity 0·871.

Dose.—20 to 60 minims.

SPIRITUS CINNAMOMI.

Spirit of Cinnamon.

Take of

Oil of Cinnamon	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose.—½ to 1 fluid drachm.

Preparation.—Acidum Sulphuricum Aromatĭcum.

If made with English oil
as directed this preparation
will be slightly milky
in appearance.

SPIRITUS JUNIPERI.

Spirit of Juniper.

Take of

Oil of Juniper	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose.—½ to 1 fluid drachm.

Preparation.—Mistura Creasoti.

SPIRITUS LAVANDULÆ.

Spirit of Lavender.

Take of

Oil of Lavender	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose.—½ to 1 fluid drachm.

SPIRITUS MENTHÆ PIPERITÆ.

Spirit of Peppermint.

Take of

Oil of Peppermint. . . .	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose.—½ to 1 fluid drachm.

SPIRITUS MYRISTICÆ.

Spirit of Nutmeg.

Take of

Volatile Oil of Nutmeg . . .	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose.—½ to 1 fluid drachm.

Preparation.—Mistura Ferri Composita.

o a little warm S.V.R. add a little iodine with a few drops of
ij. soda warm gently + set aside for a time. Iodoform deposited.
$C_2H_5OH + 4I_2 + 6NaOH = CHI_3 + 5NaI + NaCHO_2 + 5H_2O$.

SPIRITUS RECTIFICATUS.

Rectified Spirit.

84 % C_2H_5OH

Alcohol, C_2H_5HO, with sixteen per cent. of water; obtained by the distillation of fermented saccharine fluids.

Characters and Tests.—Colourless, transparent, very mobile and inflammable, of a characteristic pleasant odour, and a strong spirituous burning taste. Burns with a blue flame without smoke. Specific gravity 0·838. Remains clear when diluted with distilled water. Absence of fusel oil. A little rubbed on the back of the hand leaves no unpleasant smell after the spirit has evaporated. Absence of aldehyde. Four fluid ounces with thirty grain-measures of the volumetric solution of nitrate of silver exposed for twenty-four hours to bright light, and then decanted from the black powder which has formed, undergoes no further change when again exposed to light with more of the test. Absence of fusel oil & aldehyde.

Tinctures made with Rectified Spirit.

Tinctura Aconiti
,, Arnicæ
,, Asafœtidæ
,, Aurantii Recentis
,, Benzoini Composita
,, Cannabis Indicæ
,, Capsici
,, Cinnamomi
,, Cubebæ
,, Iodi
,, Laricis
Tinctura Lavandulæ Composita
,, Myrrhæ
,, Opii Ammoniata
,, Podophylli
,, Pyrethri
,, Sumbul
,, Tolutana
,, Veratri Viridis
,, Zingiberis
,, ,, Fortior

SPIRITUS ROSMARINI.

Spirit of Rosemary.

Take of

Oil of Rosemary	1 fluid ounce
Rectified Spirit	49 fluid ounces

Dissolve.

Dose.—$\frac{1}{2}$ to 1 fluid drachm.

Rectified Spirit B.P. is what is commonly termed 56 O.P. i.e. 100 vols require diluting to 156 in order to produce "Proof Spirit" According to Excise requirements 13 vols weigh 12 vols dist.d wa

Alcohol of the U.S.P. is 65 O.P. & contains 92% absolute alcohol.

SPIRITUS TENUIOR.

Proof Spirit.

Take of

Rectified Spirit	5 pints
Distilled Water	3 pints

Mix.

Test.—Specific gravity 0·920. It contains, by weight, about 49 per cent., and, by volume, about 57 per cent., of absolute alcohol.

Tinctures made with Proof Spirit.

Tinctura Aloes
,, Aurantii
,, Belladonnæ
,, Buchu
,, Calumbæ
,, Camphoræ Composita
,, Cantharidis
,, Cardamomi Composita
,, Cascarillæ
,, Catechu
,, Chiratæ
,, Cimicifugæ
,, Cinchonæ
,, ,, Composita
,, Cocci
,, Colchici Seminum
,, Conii
,, Croci
,, Digitalis
,, Ergotæ

Tinctura Gallæ
,, Gelsemii
,, Gentianæ Composita
,, Hyoscyami
,, Jaborandi
,, Jalapæ
,, Krameriæ
,, Limonis
,, Lobeliæ
,, Lupuli
,, Opii
,, Quassiæ
,, Quininæ
,, ,, Ammoniata
,, Rhei
,, Sabinæ
,, Scillæ
,, Senegæ
,, Sennæ
,, Serpentariæ
,, Stramonii
,, Valerianæ

SPIRITUS VINI GALLICI.

French Brandy.

Spirit distilled from French wine. It has a characteristic flavour, and a light sherry colour derived from the cask in which it has been kept. Contains about 55 % by vol:

Preparation.—Mistura Spiritus Vini Gallici.

STAPHISAGRIÆ SEMINA.

Stavesacre Seeds.

N.O. Ranunculaceæ.

The dried ripe seeds of Delphinium Staphisagria, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 4. Cult^d in the basin of the Mediterranean.

Characters.—Irregularly triangular or obscurely quadrangular, arched, blackish-brown when fresh, but becoming dull greyish-brown by keeping. Testa wrinkled and deeply pitted; nucleus soft, whitish, oily. No marked odour; taste nauseously bitter and acrid. P.C. Delphinine delphinoidine delphisine 3 alkaloids 25% fixed fatty oil.

Preparation.—Unguentum Staphisagriæ.

STRAMONII SEMINA.

Stramonium Seeds.

N.O. Solanaceæ.

The dried ripe seeds of Datura Stramonium, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 192. Asia naturalized in most countries.

Characters.—About one-sixth of an inch long, reniform, flattened, brownish-black, finely pitted, wrinkled. Odour disagreeable when bruised; taste bitterish. P.C. 25% fixed oil ·3% alkaloids

Daturine is a mixture of hyoscyamine + atropine.

Preparations.

Extractum Stramonii
Tinctura Stramonii . 54½ grains to 1 fluid ounce

If a strong alcoholic solution of strychnine be mixed with an alc: solution of NH_4HS containing free S, orange red crystals separate out. These on treatment with H_2SO_4 form strych: sulph + hydrogen persu is ppt! in oily drops.

$2C_{21}H_{22}N_2O_2 + 6H_2S + O_3 = (2C_{21}H_{22}N_2O_3 \cdot 3H_2S_2) + 3H_2O.$

STRYCHNINA.

Strychnine.

Synonym.—Strychnia.

$C_{21}H_{22}N_2O_2$.

An alkaloid prepared from Nux Vomica. It may be obtained by the following process:—

Take of

Nux Vomica	1 pound
Acetate of Lead	180 grains
Solution of Ammonia	a sufficiency
Rectified Spirit	a sufficiency
Distilled Water	a sufficiency

Heat the previously split seeds to a temperature of 212° F. (100° C.) for three hours, and then reduce them to a fine powder. Digest the powder for twelve hours with two pints of the spirit and one of the water, gently heating; strain through linen, express strongly and repeat the process twice. Distil off the spirit from the mixed fluid, evaporate the watery residue to about sixteen ounces, and filter (1) when cold. Add now the acetate of lead (2), previously dissolved in distilled water, so long as it occasions any precipitate; filter; wash the precipitate with ten ounces of cold water, adding the washings to the filtrate; evaporate the clear fluid to eight ounces, and when it has cooled add the ammonia in slight excess, stirring thoroughly. Let the mixture stand at the ordinary temperature for twelve hours; collect the precipitate on a filter, wash it once with a few ounces of cold distilled water, dry it in a water-bath or hot-air chamber, and boil it with successive portions of rectified spirit, till the fluid scarcely tastes bitter. Distil off most of the spirit, evaporate the residue to the bulk of about half an ounce, and set it aside to cool. Cautiously pour off the yellowish mother liquor (which contains the brucine of the seeds) from the white crust of strychnine which adheres to the vessel. Throw the crust on a paper filter

(1) Some oily + resinous matter is thus removed.

(2) This ppts much colouring matter + igasuric acid the alkaloids strychnine + brucine being converted into acetates

Brucine $C_{23}H_{26}N_2O_4 \cdot 4H_2O$ Readily soluble in alcohol.
Nitric acid colours blood red changing to orange yellow.

wash it with a mixture of two parts of rectified spirit and one of water, till the washings cease to become red on the addition of nitric acid; finally, dissolve it by boiling with an ounce of rectified spirit, and set it aside to crystallise. More crystals may be obtained by evaporating the mother liquor.

Absence of brucine

Characters and Tests.—In right square octahedrons or prisms colourless and inodorous; sparingly soluble in water, but communicating to it an intensely bitter taste; soluble in boiling rectified spirit, and in chloroform, but not in absolute alcohol or in ether. Pure sulphuric acid forms with it a colourless solution, which on the addition of bichromate of potassium acquires an intensely violet hue, speedily passing through red to yellow. Not coloured by nitric acid; leaves no ash when burned with free access of air. A very active poison.

1 in 7000.

lightly cold S.S.

Absence of brucine.

Dose.—$\frac{1}{30}$ to $\frac{1}{12}$ grain.

Preparation.

Liquor Strychninæ Hydrochloratis, about 1 grain in 100 fl. grs.

STYRAX PRÆPARATUS.

Prepared Storax.

N.O. Liquidambaraceæ.

A balsam prepared from the inner bark(1) of Liquidambar orientalis, *Miller*; *Hook. Icon. Plant.* 3rd ser. plate 1019. Purified by solution in spirit, filtration, and evaporation.

(1) Scraped then boiled + storax skimmed off.

ndig. in S.W. Asia Minor.

Characters and Tests.—A semi-transparent brownish-yellow semi-fluid balsam about the consistence of thick honey, with a strong agreeable odour and balsamic taste. Heated in a test-tube on the vapour-bath, it becomes more liquid, but gives off no moisture; boiled with solution of bichromate of potassium and sulphuric acid, it evolves an odour resembling that of essential oil of bitter almonds.

Preparation.

Tinctura Benzoini Composita . 33 grains to 1 fluid ounce

P.C. Storesin Cinnamic acid styrol
Styracin + styrogenin.

Succus is a liquid expressed from a fresh plant or part of
plant to which $\frac{1}{3}$ its volume S.V.R. has been added as a preservat
The addition of the spirit slowly causes some of the mucilaginous
matter to become insoluble.

The Succi are
best filtered thro'
Paper Pulp.

SUCCUS BELLADONNÆ.

Juice of Belladonna.

Take of
Fresh leaves and young branches of Belladonna . . . . . 7 pounds
Rectified Spirit . . . . a sufficiency

Bruise the belladonna in a stone mortar, press out the juice, and to every three measures of juice add one of the spirit. Set aside for seven days, and filter. Keep it in a cool place.

Dose.—5 to 15 minims.

SUCCUS CONII.

Juice of Hemlock.

Take of
Fresh leaves and young branches of Hemlock . . . . . 7 pounds
Rectified Spirit . . . . a sufficiency

Bruise the hemlock in a stone mortar, press out the juice, and to every three measures of juice add one of the spirit. Set aside for seven days, and filter. Keep it in a cool place.

Dose.—½ to 1 fluid drachm.

Preparations.

Cataplasma Conii | Vapor Coninæ

SUCCUS HYOSCYAMI.

Juice of Henbane.

Take of
Fresh leaves, flowering tops, and young branches of Henbane . . . 7 pounds
Rectified Spirit . . . . a sufficiency

Bruise the henbane in a stone mortar, press out the juice, and to every three measures of juice add one of the spirit. Set aside for seven days, and filter. Keep it in a cool place.

Dose.—½ fluid drachm to 1 fluid drachm.

SUCCUS SCOPARII.

Juice of Broom.

Take of

Fresh Broom Tops	7 pounds
Rectified Spirit	a sufficiency

Bruise the broom tops in a stone mortar, press out the juice, and to every three measures of juice add one of the spirit. Set aside for seven days, and filter. Keep it in a cool place.

Dose.—1 to 2 fluid drachms.

SUCCUS TARAXACI.

Juice of Dandelion.

This preparation tends to become sweetish on keeping - due to the formation of mannite sugar.

Take of

Fresh Dandelion Root . . .	7 pounds
Rectified Spirit	a sufficiency

Bruise the dandelion root in a stone mortar, press out the juice, and to every three measures of juice add one of the spirit. Set aside for seven days, and filter. Keep it in a cool place.

700

Dose.—1 to 2 fluid drachms.

SULPHUR PRÆCIPITATUM.

Precipitated Sulphur.

Take of

Sublimed Sulphur . . .	5 ounces
Slaked Lime	3 ounces
Hydrochloric Acid . . .	8 fluid ounces, or a sufficiency
Distilled Water	a sufficiency

$3 CaH_2O_2 + 6 S_2 = 2 CaS_5 + CaS_2O_3 + 3H_2O$

$2 CaS_5 + CaS_2O_3 + 6HCl = 6 S_2 + 3 CaCl_2 + 3H_2O$.

H_2SO_4 cannot be used to replace the HCl as $CaSO_4$ would be pptd with the S. Neither can HNO_3 be used as this would oxidise the calcium salt to $CaSO_4$.

Heat the sulphur and lime, previously well mixed, in a pint of the water, stirring diligently with a wooden spatula; boil for fifteen minutes, and filter. Boil the residue again in half a pint of the water, and filter. Let the united filtrates cool, dilute with two pints of the water, and, in an open place or under a chimney, add in successive quantities the hydrochloric acid previously diluted with a pint of the water, until effervescence ceases and the mixture acquires a slight acid reaction. Allow the precipitate to settle, decant the supernatant liquid, pour on fresh distilled water, and continue the purification by affusion of distilled water and subsidence, until the fluid ceases to have an acid reaction and to precipitate with oxalate of ammonium. Collect the precipitated sulphur on a calico filter, wash it once with distilled water, and dry it at a temperature not exceeding 120° F. (48°·9 C.)

Characters and Tests.—A greyish-yellow soft powder free from grittiness and from the smell of sulphuretted hydrogen. When heated in an open vessel, it burns with a blue flame and the evolution of sulphurous acid gas. Entirely volatilised by heat. Under the microscope it is seen to consist of opaque globules without any admixture of crystalline matter. Otherwise it corresponds with sublimed sulphur.

Absence of $CaSO_4$

Dose.—20 to 60 grains.

S. is allotropic
S is dimorphic
(crystals belonging to rhombic or monoclinic) systems

SULPHUR SUBLIMATUM.

Sublimed Sulphur.

Sulphur, prepared from crude or rough sulphur by sublimation.

Characters and Tests.—A slightly gritty powder of a fine greenish-yellow colour, without taste and without odour, unless heated; burning in open vessels with a blue flame and the evolution of sulphurous acid gas. Entirely volatilised by heat; does not redden moistened litmus paper. Solution of ammonia, agitated with it, and filtered, does not on evaporation leave any residue.

Dose.—20 to 60 grains.

Action of heat on S. Sulphur melts at 115°C which if temp: is not allo exceed 120°C solidifies on cooling to a transparent vitreous mass. Fro the limpid orange coloured liquid darkens in colour & becomes viscid. 200-250°C the mass is almost black & very viscid. On further hea it becomes more mobile until its boiling point 448°C is reached, & it is transformed into an orange coloured gas. It is never so mobile when 1st melted. S. vapour is in a state of true gas only at 1000°C. S. heated to 280°C poured into water forms plastic modification.

Preparations containing Sulphur.

Confectio Sulphuris	4 parts in 10, nearly
Emplastrum Ammoniaci cum Hydrargyro	
,, Hydrargyri	
Pulvis Glycyrrhizæ Compositus	1 part in 12
Unguentum Sulphuris	1 part in 5

Preparations for which Sublimed Sulphur is used.

Antimonium Sulphuratum
Potassa Sulphurata
Sulphuris Iodidum
Sulphur Præcipitatum

SULPHURIS IODIDUM.

Iodide of Sulphur.

Take of

Iodine	4 ounces
Sublimed Sulphur	1 ounce

Rub them together in a glass or earthenware mortar until they are thoroughly mixed. Put the mixture into a flask, close the orifice loosely, and apply heat gently so that the colour of the mass shall become gradually darkened. When the colour has become uniformly dark throughout, increase the heat so as to produce liquefaction. Then incline the flask in different directions, in order to return into the liquid any portion of the iodine which may have been condensed on the inner surface of the vessel. Lastly, withdraw the heat, and when the liquid has congealed, remove the mass by breaking the flask, reduce it to pieces, and keep these in a well-stoppered bottle.

Characters and Tests.—A greyish-black solid substance, with a radiated crystalline appearance. It resembles iodine in smell, and in the property of staining the cuticle when applied to it. Soluble in about sixty parts of glycerine; insoluble in cold water. “If 100 grains be thoroughly boiled” “with water, the iodine will pass off in vapour, and about” “twenty grains of sulphur will remain.

Preparation.

Unguentum Sulphuris Iodidi	30 grains to 1 ounce

A suppository is a small cone consisting of a basis of low melting point + an active substance designed for administration per recto to obtain local action or to avoid the introduction of medicines into the stomach.

SUMBUL RADIX.

Sumbul Root.

N. O. Umbelliferæ.

The dried transverse sections of the root of Ferula Sumbul, *Hook. fil.* (Euryangium Sumbul, *Kauffmann*). *Bentl. and Trim. Med. Pl.* vol. ii. plate 129.

Characters.—Varying much in size, but usually from about one inch to three inches in diameter, and from three-quarters of an inch to more than an inch in thickness. The pieces are covered on the outer surface with a dusky-brown papery transversely wrinkled bark, and are sometimes beset with short bristly fibres; internally they are spongy, coarsely fibrous, dry, farinaceous, and dirty yellowish-brown, mottled with whitish patches and spots of exuded resin. Odour strong, musk-like; taste bitter, aromatic.

Preparation.

Tinctura Sumbul . . 54½ grains to 1 fluid ounce

P.C. $\frac{1}{3}$ ʒ. of a bluish vol: oil Soft resin of musk odour 9%. Starch &c. On dry distillation yields umbelliferon.

SUPPOSITORIA ACIDI CARBOLICI CUM SAPONE.

Carbolic Acid Suppositories.

Take of

Carbolic Acid	12 grains
Curd Soap, in powder . . .	180 grains
Glycerine of Starch . . .	40 grains, or a sufficiency

Wt. nearly 20 grs.

Mix the ingredients so as to form a paste of suitable consistence. Divide the mass into twelve equal parts, each of which is to be made into a conical or other convenient form for a suppository.

Each suppository contains one grain of carbolic acid.

SUPPOSITORIA ACIDI TANNICI.

Tannic Acid Suppositories.

Take of

Tannic Acid	36 grains	
Oil of Theobroma	144 grains	Wt 15 grs

Rub the tannic acid with forty-four grains of the oil of theobroma in a slightly warmed mortar, and add them to the remainder of the oil of theobroma previously melted at a low temperature; mix the whole thoroughly, and pour the mixture while it is fluid into suitable moulds of the capacity of fifteen grains; or the fluid mixture may be allowed to cool, and then be divided into twelve equal parts, each of which shall be made into a conical or other convenient form for a suppository.

Each suppository contains three grains of tannic acid.

SUPPOSITORIA ACIDI TANNICI CUM SAPONE.

Tannic Acid Suppositories with Soap.

Take of

Tannic Acid	36 grains	Wt about 18 grs
Glycerine of Starch	30 grains	
Curd Soap, in powder	100 grains	
Starch, in powder	a sufficiency	

Mix the tannic acid with the glycerine of starch and soap, and add sufficient starch to form a paste of suitable consistence. Divide the mass into twelve equal parts, each of which is to be made into a conical or other convenient form for a suppository.

Each suppository contains three grains of tannic acid.

SUPPOSITORIA HYDRARGYRI.

Mercurial Suppositories.

Take of

Ointment of Mercury	60 grains	Wt. 10 grs.
Oil of Theobroma	120 grains	

Melt the oil of theobroma with sufficient heat, then add the ointment of mercury, and having mixed them thoroughly, without applying more heat, immediately pour the mixture, before it has congealed, into suitable moulds of the capacity of fifteen grains; or the fluid mixture may be allowed to cool, and then be divided into twelve equal parts, each of which shall be made into a conical or other convenient form for a suppository.

Each suppository contains five grains of ointment of mercury.

SUPPOSITORIA IODOFORMI.

Iodoform Suppositories.

Take of

wt 15 grs.

Iodoform, in powder	36 grains
Oil of Theobroma	144 grains

Rub the iodoform with forty-four grains of the oil of theobroma in a slightly warmed mortar, and add this to the remainder of the oil of theobroma previously melted at a low temperature; mix the whole thoroughly, and pour the mixture while it is fluid into suitable moulds of the capacity of fifteen grains; or the fluid mixture may be allowed to cool, and then be divided into twelve equal parts, each of which shall be made into a conical or other convenient form for a suppository.

Each suppository contains three grains of iodoform.

SUPPOSITORIA MORPHINÆ.

Morphine Suppositories.

Take of

wt 15 grs.

Hydrochlorate of Morphine . . .	6 grains
Oil of Theobroma	174 grains

Rub the hydrochlorate of morphine with twenty-four grains of the oil of theobroma in a slightly warmed mortar, and add this to the remainder of the oil of theobroma previously melted at a low temperature; mix the whole thoroughly, and pour the mixture while it is fluid into suitable moulds of the capacity of fifteen grains; or the fluid mixture may be allowed to cool, and then be divided into twelve equal parts, each of which shall be made into a conical or other convenient form for a suppository.

Each suppository contains half a grain of hydrochlorate of morphine.

SUPPOSITORIA MORPHINÆ CUM SAPONE.

Morphine Suppositories with Soap.

Wt about 18grs.

Take of

Hydrochlorate of Morphine	6 grains
Glycerine of Starch	30 grains
Curd Soap, in powder	100 grains
Starch, in powder	a sufficiency

Mix the hydrochlorate of morphine with the glycerine of starch and soap, and add sufficient starch to form a paste of suitable consistence. Divide the mass into twelve equal parts, each of which is to be made into a conical or other convenient form for a suppository.

Each suppository contains half a grain of hydrochlorate of morphine.

SUPPOSITORIA PLUMBI COMPOSITA.

Compound Lead Suppositories.

Take of

Wt 15grs.

Acetate of Lead	36 grains
Opium, in powder	12 grains
Oil of Theobroma	132 grains

Rub the acetate of lead and opium with forty-two grains of the oil of theobroma in a slightly warmed mortar, and add them to the remainder of the oil of theobroma previously melted at a low temperature; mix the whole thoroughly, and

A Syrup is an aqueous solution or liquid extract of a drug thickened & sweetened with a large proportion of sugar.

pour the mixture while it is fluid into suitable moulds of the capacity of fifteen grains; or the fluid mixture may be allowed to cool, and then be divided into twelve equal parts, each of which shall be made into a conical or other convenient form for a suppository.

Each suppository contains three grains of acetate of lead and one grain of opium.

For ʒj sugar use 68 ♏ syrup.
" 437.5 " " fʒix syrup.

SYRUPUS.

Syrup.

Take of

Refined Sugar	5 pounds
Distilled Water	2 pints

Dissolve the sugar in the water with the aid of heat; and add, after cooling, as much distilled water as may be necessary to make the weight of the product seven pounds and a half. The specific gravity should be 1·330.

Preparations.

Confectio Opii
,, Scammonii
Mistura Creasoti
,, Cretæ
Pilula Cambogiæ Composita
Syrupus Aurantii
,, Chloral
,, Zingiberis
Tinctura Chloroformi et Morphinæ

SYRUPUS AURANTII.

Syrup of Orange Peel.

Take of

Tincture of Orange Peel . . .	1 fluid ounce
Syrup	7 fluid ounces

Mix. The specific gravity should be about 1·282.

Dose.—1 fluid drachm.

Preparation.—Confectio Sulphuris.

Syrups of Sp. G. lower than 1·3 are liable to undergo fermentation. For acid syrups 1·3 – 1·31 is high enough & if stronger there is some danger of pptn of part of the sugar as "grape sugar" due to the gradual action of the acid.

SYRUPUS AURANTII FLORIS.

Syrup of Orange Flower.

Take of

Orange-flower Water . . .	8 fluid ounces
Refined Sugar	3 pounds
Distilled Water	16 fluid ounces, or a sufficiency

Dissolve the sugar in the distilled water by means of heat; (1) strain, and when nearly cold″ add the orange-flower water, with a sufficient quantity of distilled water, if necessary, to make the product four pounds and a half. The specific gravity should be about 1·330.

(1) To avoid loss of essent: oil.

Dose.—1 fluid drachm.

SYRUPUS CHLORAL.

Syrup of Chloral.

Take of

Hydrate of Chloral	80 grains
Distilled Water	$1\frac{1}{2}$ fluid drachm
Syrup	a sufficiency

Dissolve the hydrate of chloral in the water, and add the syrup until the mixed product measures a fluid ounce. The specific gravity should be about 1·320.

Dose.—$\frac{1}{2}$ to 2 fluid drachms.

Contains ten grains of hydrate of chloral in one fluid drachm.

SYRUPUS FERRI IODIDI.

Syrup of Iodide of Iron.

Take of

Iron	1 ounce
Iodine	2 ounces
Refined Sugar	28 ounces
Distilled Water	13 fluid ounces

$Fe_2 + 2I_2 = 2FeI_2$.

Should be stored in full bottles in good light with a small coil of clean iron wire in each. This materially retards discoloration & renders the addition of preservatives unnecessary.

The object of boiling with part of the syrup is to convert some of the cane sugar into dextrose which is said to have a preserving influence upon the syrup. The addition of ʒ½ · of H_3PO_2 (30%) is more effectual.

Prepare a syrup by dissolving the sugar in ten ounces of the water with the aid of a little heat. Digest the iodine and the iron in a flask, with the remaining three ounces of the water, heating slightly and occasionally shaking until the froth becomes white; add now two fluid ounces of the syrup and boil gently for ten minutes; then filter the liquid while still hot into the remainder of the warm syrup, and mix. The product should weigh about two pounds eleven ounces, and its specific gravity should be about 1·385.

parasaccharose is formed

It contains 4·3 grains of iodide of iron in 1 fluid drachm.

(5·7%) *Dose.*—½ to 1 fluid drachm.

SYRUPUS FERRI PHOSPHATIS.

Syrup of Phosphate of Iron.

Take of

Granulated Sulphate of Iron	224 grains
Phosphate of Sodium	200 grains
Bicarbonate of Sodium	56 grains
Concentrated Phosphoric Acid	1¼ fluid ounces
Refined Sugar	8 ounces
Distilled Water	8 fluid ounces

Dissolve the sulphate of iron in about four ounces of boiling water, and the phosphate of sodium in a similar quantity of cold water; mix the solutions, then add the bicarbonate of sodium dissolved in a little water, and, after careful stirring, transfer the precipitate to a calico filter, and wash it with distilled water, till the filtrate ceases to be affected by chloride of barium. Mix the residue on the filter, in a mortar, with the phosphoric acid. As soon as the precipitate is dissolved filter the solution, add water and the sugar, and dissolve without heat. The product should measure exactly twelve fluid ounces; any water which may be necessary, beyond that introduced with the precipitate or with the sugar, being added to form the stated bulk. Its specific gravity is about 1·305.

It contains the equivalent of about one grain of anhydrous phosphate of iron, $Fe_3(PO_4)_2$, in one fluid drachm.

Dose.—1 fluid drachm.

$6Na_2HPO_4 + 6FeSO_4 = 2Fe_3(PO_4)_2 + 6Na_2SO_4 + 2H_3PO_4$

$\therefore H_3PO_4 + 6NaHCO_3 = 2Na_3PO_4 + 6H_2O + 6CO_2.$

$2Na_3PO_4 + 3FeSO_4 = 2Fe_3(PO_4)_2 + 3Na_2SO_4$

SYRUPUS HEMIDESMI.

Syrup of Hemidesmus.

Take of

Hemidesmus Root, bruised	4 ounces
Refined Sugar	28 ounces
Boiling Distilled Water	1 pint

Infuse the hemidesmus in the water, in a covered vessel, for four hours, and strain. Set it by till the sediment subsides; then decant the clear liquor, add the sugar, and dissolve by help of a little heat. The product should weigh two pounds ten ounces, and its specific gravity be about 1·335.

Dose.—1 fluid drachm.

SYRUPUS LIMONIS.

Syrup of Lemons.

Take of

Fresh Lemon Peel	2 ounces
Lemon Juice, strained	1 pint
Refined Sugar	2¼ pounds

Heat the lemon juice to the boiling point,(1) and, having put it into a covered vessel with the lemon peel, let them stand until they are cold, then filter and dissolve the sugar in the filtered liquid with the aid of heat. The product should weigh three pounds and a half, and its specific gravity be about 1·340.

(1) To coagulate albumen.

Dose.—1 fluid drachm.

Preparation containing Syrupus Limonis.

Liquor Magnesii Citratis

SYRUPUS MORI.

Syrup of Mulberries.

Take of

Mulberry Juice	1 pint
Refined Sugar	2¼ pounds
Rectified Spirit	2½ fluid ounces

(1) To coagulate albumen.

Heat the mulberry juice to the boiling(1) point, and when it has cooled filter it. Dissolve the sugar in the filtered liquid with the aid of heat, and add the spirit. The product should weigh three pounds six ounces, and its specific gravity be about 1·330.

Dose.—1 fluid drachm.

SYRUPUS PAPAVERIS.

Syrup of Poppies.

Take of

Poppy Capsules, freed from the seeds, and reduced to No. 20 powder	36 ounces
Rectified Spirit	16 fluid ounces
Refined Sugar	4 pounds
Boiling Distilled Water . . .	a sufficiency

Mix the poppy capsules with four pints of the water, and infuse for twenty-four hours, stirring frequently; then pack in a percolator, and adding more of the water allow the liquor slowly to pass until about two gallons have been collected or the mass is exhausted. Evaporate the liquor by a water-bath until it is reduced to three pints. When quite cold add the spirit, let the mixture stand for twelve hours, and filter. Distil off the spirit, the remaining liquor being evaporated to two pints, and then add the sugar. The product should weigh six pounds and a half, and its specific gravity be about 1·330.

To ppt. mucilage

Dose.—1 fluid drachm.

SYRUPUS RHEI.

Syrup of Rhubarb.

Take of

Rhubarb Root, in No. 20 powder	of each 2 ounces
Coriander Fruit, in No. 20 powder	
Refined Sugar	24 ounces
Rectified Spirit	8 fluid ounces
Distilled Water	24 fluid ounces

(1) Would be better to use oil of coriander as in case of Syr. Sennae much of the aroma being lost in the evaporation.

Mix the rhubarb and coriander; pack them in a percolator; pass the spirit and water, previously mixed, slowly through them; evaporate the liquid that has thus passed until it is reduced to fourteen fluid ounces, and in this, after it has been filtered, dissolve the sugar with the aid of heat. The product should weigh nearly two and a half pounds, and its specific gravity be about 1·310.

Dose.—1 to 4 fluid drachms.

SYRUPUS RHŒADOS.

Syrup of Red Poppy.

Take of

Fresh Red Poppy Petals .	13 ounces
Refined Sugar . . .	2¼ pounds
Distilled Water . . .	1 pint, or a sufficiency
Rectified Spirit . . .	2½ fluid ounces

Add the petals gradually to the water heated in a water-bath, frequently stirring, and afterwards, the vessel being removed, infuse for twelve hours. Then press out the liquor, strain, add the sugar, and dissolve by means of heat. When nearly cold, add the spirit, and as much distilled water as may be necessary to make up for loss in the process, so that the product shall weigh three pounds ten ounces. Its specific gravity should be about 1·330.

Dose.—1 fluid drachm.

SYRUPUS ROSÆ GALLICÆ.

Syrup of Red Roses.

Take of

Dried Red-Rose Petals	2 ounces
Refined Sugar	30 ounces
Boiling Distilled Water	1 pint

Infuse the petals in the water for two hours, squeeze through calico, heat the liquor to the boiling point, and filter. Dissolve the sugar in the liquor by means of heat. The product should weigh two pounds fourteen ounces, and its specific gravity be about 1·335.

Dose.—1 fluid drachm.

SYRUPUS SCILLÆ.

Syrup of Squill.

Take of

Vinegar of Squill	1 pint
Refined Sugar	2½ pounds

Dissolve with the aid of a little heat. Specific gravity about 1·345.

Dose.—½ to 1 fluid drachm.

SYRUPUS SENNÆ.

Syrup of Senna.

Take of

Senna, broken small	16 ounces
Oil of Coriander	3 minims
Refined Sugar	24 ounces
Distilled Water	5 pints, or a sufficiency
Rectified Spirit	3 fluid ounces

Digest the senna in seventy ounces of the water for twenty-four hours at a temperature of 120° F. (48°·9 C.); press out the liquor and strain it. Digest the marc in thirty ounces of the water for six hours at the same temperature; again press out the liquor and strain it. Evaporate the mixed liquors in a water-bath to ten fluid ounces, and, when cold, add the (1) rectified spirit, previously mixed with the oil of coriander. Clarify by filtration, and wash what remains on the filter with (2) distilled water, until the washings make up the filtrate to sixteen fluid ounces. Then add the sugar, and dissolve by aid of heat. The product should weigh two pounds ten ounces, and its specific gravity be about 1·310.

Dose.—1 to 4 fluid drachms.

So as not to extract albuminoids & mucilaginous matter.

Evaporation in vacuo is advantageous as the active principle (cathartic acid) is injured by much heat.

(It however brings to boil to coagulate albumen.

(1) Spt ppts the mucilage.

(2) Would be better to wash with weak spirit as the water must redissolve some mucilage.

SYRUPUS TOLUTANUS.

Syrup of Tolu.

Take of

Balsam of Tolu . . .	$1\frac{1}{4}$ ounce
Refined Sugar	2 pounds
Distilled Water . . .	1 pint, or a sufficiency

Boil the balsam in the water for half an hour in a lightly covered vessel, stirring occasionally. Then remove from the fire and add distilled water, if necessary, so that the liquid shall measure sixteen ounces. Filter the solution when cold, add the sugar, and dissolve with the aid of a steam or water bath. The product should weigh three pounds, and its specific gravity be about 1·330.

from resin & cinnamic acid the latter crystallizing out as the liquid cools.

Dose.—1 fluid drachm.

SYRUPUS ZINGIBERIS.

Syrup of Ginger.

Take of

Strong Tincture of Ginger . .	6 fluid drachms
Syrup, sufficient to produce . .	20 fluid ounces

18 mins in 1 fl: oz:

Mix, with agitation.

Dose.—1 fluid drachm. Sp. G. 1·313.

TABACI FOLIA.

Leaf Tobacco.

N.O. Solanaceæ.

The dried leaves of Nicotiana Tabacum, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 191. Imp: America cult^d.

Characters and Tests.—Large, being sometimes more than twenty inches long; ovate, ovate-lanceolate, or oval-oblong, acute, entire, brown, brittle, glandular-hairy; having a characteristic odour and nauseous-bitter acrid taste; yielding, when distilled with solution of potash, an alkaline fluid, which has the

P.C. Nicotine $C_{10}H_{14}N_2$ ·7 to 5%
Nicotianin resin albumen malates citrates
Ash 14 to 18% or more.

Tablets, consist either of pure or nearly pure drugs compressed into sm
discs or biconvex masses; or of active ingredients mixed with a sacchar
or chocolate basis + formed into discs similar too but much smaller tha

peculiar odour of nicotina, and precipitates with perchloride of platinum and tincture of galls.

TABELLÆ NITROGLYCERINI.

Tablets of Nitroglycerine.

Synonym.—Tabellæ Trinitrini.

Tablets of chocolate each weighing two and a half grains and containing one-hundredth of a grain of pure nitroglycerine.

Dose.—**1 or 2 tablets.**

TAMARINDUS.

Tamarind.

N.O. Leguminosæ.

India + tropical Africa
Common Vars:
West Indian preserved with syrup.
East Indian | Preserved without syrup.
Egyptian |

The preserved pulp of the fruit of Tamarindus indica, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 92.

Characters and Test.—A reddish-brown moist sugary mass, enclosing strong branched fibres, and brown shining seeds, each enclosed in a tough membranous coat. Taste agreeable, refreshing, subacid. A piece of bright iron, left in contact with the pulp for an hour, does not exhibit any deposit of copper.

Preparation.—Confectio Sennæ, 9 parts in **75.**

P.C. Tartaric citric a little malic + acetic acids, mostly as K comps. sugar pectin + testa of seeds contains tannin.

TARAXACI RADIX.

Dandelion Root.

N.O. Compositæ.

The fresh and dried roots of Taraxacum officinale, *Wiggers* (Taraxacum Dens-leonis, *Desf.*); *Bentl. and Trim. Med. Pl.* vol. iii. plate 159. Collected in the autumn from indigenous plants.

Characters.—Root when fresh frequently a foot or more in length, and half an inch or more in diameter, smooth and yellowish-brown externally, whitish within. It breaks readily with a short fracture, and a milky juice exudes; the fractured surface presenting faint concentric rings. When dried it is more or less shrivelled, deeply furrowed longitudinally, dark brown or blackish, breaks with a short fracture, and the exposed surface shows a yellow porous central woody axis, surrounded by a thick whitish bark, with a variable number, according to its size, of irregular well-marked concentric rings. {formed by laticiferous ducts} Inodorous; taste bitter.

Preparations.

Decoctum Taraxaci (dried) . . .	1 ounce to 1 pint
Extractum Taraxaci (fresh)	
,, ,, Liquidum (dried) .	1 fl. oz. from 1 oz.
Succus Taraxaci (fresh)	

C.C. Early in spring contains an uncrystallizable sugar which diminishes during the summer. In autumn it contains about 24% inulin. Pectin, the latex contains the crystalline bitter principle taraxacin which is sol in water + in alcohol.

TEREBINTHINA CANADENSIS.

Canada Turpentine.

Synonym.—Canada Balsam. N. O. Coniferæ.

The turpentine obtained by puncturing or incising "Liber Bark." the bark of the trunk and branches of Pinus balsamea, *Linn.* (Abies balsamea, *Mill.*); *Lambert, Ill. Gen. Pinus*, 2nd ed. plate 33. Indig: to Canada + N. U. S. principally collected in Quebec.

Characters.—A pale-yellow and faintly greenish transparent oleo-resin, of the consistence of thin honey, with a peculiar agreeable terebinthinate odour, and a slightly bitter feebly acrid taste; by exposure to the air drying very slowly into a transparent adhesive varnish, and solidifying when mixed with about a sixth of its weight of magnesia.

Dose.—20 to 30 grains. C.C. About 20% volatile oil (closely related to terebinthinene) + a resin.

Preparations.

Charta Epispastica | Collodium Flexile

THERIACA.

Treacle.

Syrupus fuscus
Sacchari Fæx.

The uncrystallised residue of the refining of sugar.

Characters.—A thick fermentable syrup of a golden colour, very sweet; not crystallising by rest or spontaneous evaporation. Specific gravity about 1·40.

Test.— Free from empyreumatic odour or flavour.

Preparations.

Pilula Aloes et Myrrhæ	Pilula Rhei Composita
,, Asafœtidæ Composita	,, Scillæ Composita
,, Conii Composita	Tinctura Chloroformi et Morphinæ
,, Ipecacuanhæ cum Scilla	

Galipot or Barras is the corresponding product obtained in France from Pinus maritima

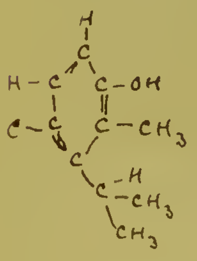
THUS AMERICANUM.

Common Frankincense. N. O. Coniferæ.

The concrete turpentine which is scraped off the trunks of Pinus australis, *Mich.* (Pinus palustris, *Mill.*), and Pinus Tæda, *Linn.*; *Lamb. Ill. Gen. Pin.* 2nd ed. plate 20, 17 and 18. N. America.

Characters.—When fresh it is a softish yellow opaque tough solid, with the same odour as crude American turpentine, but by keeping it becomes dry and brittle, darker in colour, and of a milder odour. Consists principally of abietic acid with varying proportions of Ol.

Preparation.—Emplastrum Picis.



THYMOL.

Thymol.

$C_{10}H_{13}HO$. N. O. Labiatæ Umbelliferæ.

A stearoptene obtained from the volatile oils of Thymus vulgaris, *Linn.*, Monarda punctata, *Linn.*, and Carum Ajowan, *Benth. and Hook.* (Ptychotis Ajowan, *DC.*), *Bentl. and Trim. Med. Pl.* vol. iii. plates 205 and 208, and vol. ii. plate 120, by saponifying with caustic soda and treating the sep$\overset{a}{e}$rated soap with hydrochloric

A Tincture is a spirituous solution of a drug or of the solution portion of a drug much weaker than a liquid extract.

acid, or from a distilled fraction of the oil by exposure at a low temperature. It may be purified by recrystallisation from alcohol.

Characters and Tests.—Large oblique prismatic crystals having the odour of thyme and a pungent aromatic flavour. They sink in cold water, but on heating the mixture to a temperature of 110° to 125° F. (43°·3 to 51°·7 C.) they melt and rise to the surface. Slightly soluble in cold water, freely soluble in alcohol, ether, and solutions of alkalies. The crystals volatilise completely at the temperature of a water-bath. A solution of thymol in half its bulk of glacial acetic acid, warmed with an equal volume of sulphuric acid, assumes a reddish-violet colour.

Dose.—½ to 2 grains.

TINCTURA ACONITI.

Tincture of Aconite.

1 in 8.

Take of

Aconite Root from plants cultivated in Britain, in No. 40 powder	2½ ounces
Rectified Spirit	1 pint

Macerate the aconite root for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—5 to 15 minims.

TINCTURA ALOES.

Tincture of Aloes.

1 in 40.

Take of

Socotrine Aloes, in coarse powder	½ ounce
Extract of Liquorice	1½ ounce
Proof Spirit	a sufficiency

To disguise taste & to suspend the aloes.

Macerate the aloes and extract of liquorice in fifteen fluid ounces of the spirit for seven days, in a closed vessel, with occasional agitation, then filter, and add sufficient proof spirit to make one pint.

Dose.—1 to 2 fluid drachms.

TINCTURA ARNICÆ.

Tincture of Arnica.

1 in 20.

Take of

Arnica Rhizome, in No. 40 powder . .	1 ounce
Rectified Spirit	1 pint

Macerate the arnica for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—$\frac{1}{2}$ to 1 fluid drachm.

TINCTURA ASAFŒTIDÆ.

1 in 8.

Tincture of Asafœtida.

Take of

50 t. 60 %. dissolved.

Asafœtida, in small fragments . . .	$2\frac{1}{2}$ ounces
Rectified Spirit	a sufficiency

Mixed with water ppts resin.

Macerate the asafœtida in fifteen fluid ounces of the spirit for seven days in a closed vessel, with occasional agitation, then filter, and add sufficient rectified spirit to make one pint.

Dose.—$\frac{1}{2}$ to 1 fluid drachm.

TINCTURA AURANTII.

Tincture of Orange Peel.

1 in 10

Take of

Bitter-Orange Peel, cut small and bruised	2 ounces
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation, then strain, press, and filter, and add sufficient proof spirit to make one pint.

Dose.—1 to 2 fluid drachms.

Preparations.

Mistura Ferri Aromatica . .	1 volume in 32
Syrupus Aurantii	1 volume in 8
Tinctura Quininæ	

TINCTURA AURANTII RECENTIS.

Tincture of Fresh Orange Peel. 3 in 10.

Take of

Bitter Orange . .	of each . .	a sufficiency
Rectified Spirit .		

Carefully cut from the orange the coloured part of the rind in thin slices, and macerate six ounces of this in eighteen fluid ounces of the spirit for a week, with frequent agitation. Then pour off the liquid, press the dregs, mix the liquid products, and filter. Finally, if necessary, add spirit to make one pint.

Dose.—1 fluid drachm to 2 fluid drachms.

TINCTURA BELLADONNÆ.

Tincture of Belladonna. 1 in 20.

Take of

Belladonna Leaves, in No. 20 powder .	1 ounce
Proof Spirit	1 pint

Macerate the leaves for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—5 to 20 minims.

TINCTURA BENZOINI COMPOSITA.

Compound Tincture of Benzoin.

/in 10.

Take of

Benzoin, in coarse powder	2 ounces
Prepared Storax	1½ ounce
Balsam of Tolu	½ ounce
Socotrine Aloes	160 grains
Rectified Spirit	17 fluid ounces

Macerate for seven days in a closed vessel, with occasional agitation, then filter, and add sufficient rectified spirit, if required, to make one pint.

1 gr aloes in fl ʒi

Dose.—½ to 1 fluid drachm.

TINCTURA BUCHU.

Tincture of Buchu.

/in 8

Take of

Buchu Leaves, in No. 20 powder	2½ ounces
Proof Spirit	1 pint

Macerate the buchu for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—1 to 2 fluid drachms.

TINCTURA CALUMBÆ.

Tincture of Calumba.

/in 8.

Take of

Calumba Root, cut small	2½ ounces
Proof Spirit	1 pint

Macerate the calumba for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA CAMPHORÆ COMPOSITA.

Compound Tincture of Camphor.

Synonyms.—Paregoric; Paregoric Elixir. 1 in 220.

Take of

Opium, in powder	40 grains
Benzoic Acid	40 grains
Camphor	30 grains
Oil of Anise	½ fluid drachm
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation, then filter, and add sufficient proof spirit to make one pint.

It contains the soluble matter of a quarter of a grain of the opium in one fluid drachm. = $\frac{1}{40}$ gr morphine in fl ʒi

Dose.—15 minims to 1 fluid drachm.

TINCTURA CANNABIS INDICÆ.

Tincture of Indian Hemp. 1 in 20

Take of

Extract of Indian Hemp	1 ounce
Rectified Spirit	1 pint

Dissolve the extract of hemp in the spirit. 22 m = 1 gr extract

Dose.—5 to 20 minims. Sp. G about ·866.

TINCTURA CANTHARIDIS.

Tincture of Cantharides. 1 in 80

Take of

Cantharides, in coarse powder	¼ ounce
Proof Spirit	1 pint

This is a very unsatisfactory preparation the active principle being so little soluble in S. V. T. that the tinct is a satd. solution a mixture of S. V. R + 10% acetic ether would be preferable (Cripps).

Macerate for seven days in a closed vessel, with occasional agitation, strain, press, filter, and add sufficient proof spirit to make one pint.

Dose.—5 to 20 minims.

TINCTURA CAPSICI.

Tincture of Capsicum.

1 in 27.

Take of

Capsicum Fruit, bruised	¾ ounce
Rectified Spirit	1 pint

Macerate the capsicum for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—10 to 20 minims.

TINCTURA CARDAMOMI COMPOSITA.

Compound Tincture of Cardamoms.

1 in 80.

With Aq Dest a reddish brown colour with tap water a brilliant crimson as though ammonia had been added.

Take of

Cardamom Seeds, bruised	¼ ounce
Caraway Fruit, bruised	¼ ounce
Raisins, freed from seeds	2 ounces
Cinnamon Bark, bruised	½ ounce
Cochineal, in powder	55 grains
Proof Spirit	1 pint

Macerate the solid ingredients for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

Preparations.

Decoctum Aloes Compositum	1 volume in 3⅓
Mistura Ferri Aromatica	3 volumes in 16
,, Sennæ Composita	1 volume in 14
Tinctura Chloroformi Composita	1 volume in 2

TINCTURA CASCARILLÆ.

Tincture of Cascarilla.

1 in 8.

Take of

Cascarilla Bark, in No. 40 powder	2½ ounces
Proof Spirit	1 pint

Macerate the cascarilla for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA CATECHU.

Tincture of Catechu.

1 in 8

Catechin remains undissolved.

Take of

Catechu, in coarse powder	2½ ounces
Cinnamon Bark, bruised	1 ounce
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; strain, press, filter, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA CHIRATÆ.

Tincture of Chiretta.

1 in 8.

Take of

Chiretta, cut small and bruised	2½ ounces
Proof Spirit	1 pint

Macerate the chiretta for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA CHLOROFORMI COMPOSITA.

Compound Tincture of Chloroform.

/ in 10

Take of

Chloroform	2 fluid ounces
Rectified Spirit	8 fluid ounces
Compound Tincture of Cardamoms .	10 fluid ounces

Mix.

Dose.—20 to 60 minims. Sp. G. about ·964.

TINCTURA CHLOROFORMI ET MORPHINÆ.

Tincture of Chloroform and Morphine.

Take of

1 gr in 1 fl: ʒ:

		Contains in a 10-minim dose	
Chloroform . . .	1 fluid ounce	1¼ minim	
Ether	2 fluid drachms	⅓ minim	
Rectified Spirit . . .	1 fluid ounce	1¼ minim	
Hydrochlorate of Morphine	8 grains	$\frac{1}{48}$ grain	*
Diluted Hydrocyanic Acid .	½ fluid ounce	⅝ minim	*
Oil of Peppermint . .	4 minims	$\frac{1}{80}$ minim	
Liquid Extract of Liquorice	1 fluid ounce	1¼ minim	
Treacle	1 fluid ounce		
Syrup	a sufficiency		

Diffuse the hydrochlorate of morphine and oil of peppermint in the spirit, and add the chloroform and ether. Mix the liquid extract of liquorice and treacle with three fluid ounces of syrup, add this to the previously formed solution, mix them thoroughly, add the hydrocyanic acid, and increase the volume to eight fluid ounces by further addition of syrup.

Dose.—5 to 10 minims.

TINCTURA CIMICIFUGÆ.

Tincture of Cimicifuga. 1 in 8

Synonym.—Tinctura Actææ; Tincture of Actæa.

Take of

Cimicifuga, in No. 40 powder . . .	2½ ounces
Proof Spirit	1 pint

Macerate the cimicifuga for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the liquid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—15 to 60 minims.

TINCTURA CINCHONÆ.

Tincture of Cinchona. 1 in 5

Take of

Red Cinchona Bark, in No. 40 powder .	4 ounces
Proof Spirit	1 pint

Macerate the cinchona bark for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the

lthough the cinchona is officially ordered to contain 5 to 6% alkaloids his tinct: is not of even approximately uniform strength; the whole of the alkaloids are not extracted + the amount actually obtained varies with the nature of the particular bark used (Cripps) percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA CINCHONÆ COMPOSITA.

Compound Tincture of Cinchona.

1 in 10

Take of

Red Cinchona Bark, in No. 40 powder	2 ounces
Bitter-Orange Peel, cut small, and bruised	1 ounce
Serpentary Rhizome, bruised	½ ounce
Saffron	55 grains
Cochineal, in powder	28 grains
Proof Spirit	1 pint

Macerate the cinchona bark, and the other solid ingredients, for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA CINNAMOMI.

Tincture of Cinnamon.

1 in 8

Take of

No "40"

Cinnamon Bark, in coarse powder	2½ ounces
Rectified Spirit	1 pint

Macerate the cinnamon for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA COCCI.

Tincture of Cochineal.

1 in 8

Take of

Cochineal, in powder	2½ ounces
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; strain, press, filter, and add sufficient proof spirit to make one pint.

TINCTURA COLCHICI SEMINUM.

Tincture of Colchicum Seeds.

1 in 8

Take of

No 60 or 80.

Colchicum Seeds, finely comminuted .	2½ ounces
Proof Spirit	1 pint

The drug is so horny that it is but imperfectly exhausted when in coarse powder.

Macerate the colchicum for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—10 to 30 minims.

TINCTURA CONII.

Tincture of Hemlock.

1 in 8.

Take of

Hemlock Fruit, finely comminuted .	2½ ounces
Proof Spirit	1 pint

Macerate the hemlock fruit for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—20 to 60 minims.

TINCTURA CROCI.

Tincture of Saffron.

1 in 20.

Take of

Saffron	1 ounce
Proof Spirit	1 pint

Macerate the saffron for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

TINCTURA CUBEBÆ.

Tincture of Cubebs.

1 in 8

Take of

No 40 Cubebs, in powder	2½ ounces
Rectified Spirit	1 pint

Macerate the cubebs for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA DIGITALIS.

1 in 8

Tincture of Foxglove.

Take of

Foxglove Leaves, in No. 20 powder .	2½ ounces
Proof Spirit	1 pint

Macerate the foxglove for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—10 to 30 minims.

TINCTURA ERGOTÆ.

Tincture of Ergot.

1 in 4.

Take of

Ergot, finely comminuted . . .	5 ounces	No 20 fine enough
Proof Spirit	1 pint	A mixture of SVR 1

+ H_2O 1 would be a better solvent & extract less fatty oil.

Macerate the ergot for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—5 to 30 minims.

TINCTURA FERRI ACETATIS.

Tincture of Acetate of Iron.

1 in 4.

Take of

7.6% $Fe(C_2H_3O_2)_3$

Strong Solution of Acetate of Iron	5 fluid ounces
Acetic Acid	1 fluid ounce
Rectified Spirit	5 fluid ounces
Distilled Water	9 fluid ounces

Mix, and then add sufficient distilled water to make one pint. Preserve in a stoppered bottle.

Dose.—5 to 30 minims. Sp. G. 1·013.

TINCTURA FERRI PERCHLORIDI.

About 13·4% Fe_2Cl_6

Tincture of Perchloride of Iron.

Synonym.—Tinctura Ferri Sesquichloridi. / in 4.

The spirit in this prep: is unnecessary, useless + deleterious it neither acts as a solvent or as a preservative but even tends towards decomposition

Take of

Strong Solution of Perchloride of Iron	5 fluid ounces
Rectified Spirit	5 fluid ounces
Distilled Water	10 fluid ounces

Mix, and then add sufficient distilled water to make one pint. Preserve in a stoppered bottle.

Dose.—10 to 30 minims. Sp. G. 1·094.

TINCTURA GALLÆ.

Tincture of Galls.

/ in 8.

Take of

Galls, in No. 40 powder . . .	2½ ounces
Proof Spirit	1 pint

Macerate the galls for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

Used as a test reagent for $ZnSO_4$
(distillate of Tabac Tol c̄ KOH)

TINCTURA GELSEMII.

Tincture of Gelsemium.

/ in 8.

Take of

Gelsemium, in No. 40 powder . .	2½ ounces
Proof Spirit	1 pint

Macerate the gelsemium for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient spirit to make one pint.

Dose.—5 to 20 minims.

TINCTURA GENTIANÆ COMPOSITA.

Compound Tincture of Gentian.

1 in 13⅓.

Take of

Gentian Root, cut small and bruised .	1½ ounce
Bitter-Orange Peel, cut small and bruised	¾ ounce
Cardamom Seeds, bruised . . .	¼ ounce
Proof Spirit	1 pint

Macerate the solid ingredients for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA GUAIACI AMMONIATA.

Ammoniated Tincture of Guaiacum.

1 in 5.

Take of

Guaiacum Resin, in powder . .	4 ounces
Aromatic Spirit of Ammonia . .	a sufficiency

Guaiacic acid
remains undissolved.

Macerate the guaiacum in fifteen fluid ounces of the aromatic spirit of ammonia for seven days in a well-closed vessel, with occasional agitation, and filter; then add sufficient aromatic spirit of ammonia to make one pint.

Dose.—½ to 1 fluid drachm.

TINCTURA HYOSCYAMI.

Tincture of Henbane.

1 in 8

Take of

Henbane leaves, or flowering tops in No. 20 powder	2½ ounces
Proof Spirit	1 pint

Macerate the henbane for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 1 fluid drachm.

In preparing a decolorized tincture add the ammonia solution to the iodine + not vice versa as there is a liability to form iodide of nitrogen

TINCTURA IODI.

Tincture of Iodine.

1 in 40

Take of

Iodine	½ ounce
Iodide of Potassium	½ ounce
Rectified Spirit	1 pint

Dissolve the iodine and the iodide of potassium in the spirit.

Dose.—5 to 20 minims.

Preparation.—Vapor Iodi.

TINCTURA JABORANDI.

Tincture of Jaborandi.

1 in 4.

Take of

Jaborandi, in No. 40 powder	5 ounces
Proof Spirit	1 pint

Macerate the jaborandi for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 1 fluid drachm.

TINCTURA JALAPÆ.

Tincture of Jalap.

1 in 8

Take of

Jalap, in No. 40 powder . . .	2½ ounces
Proof Spirit	1 pint

Macerate the jalap for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Jalap being of a resinous nature it would be preferable to use a stronger spt. (S.V.R 3 Aq 1.)

Dose.—½ to 2 fluid drachms.

TINCTURA KINO.

Tincture of Kino.

1 in 10

Take of

Kino, in coarse powder . . .	2 ounces
Glycerine	3 fluid ounces
Distilled Water	5 fluid ounces
Rectified Spirit	12 fluid ounces

The glycerine is added with the object of preventing gelatinisation which otherwise occurs.

Macerate for seven days in a closed vessel, with occasional agitation, filter, and add sufficient rectified spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA KRAMERIÆ.

Tincture of Rhatany.

1 in 8.

Take of

Rhatany Root, in No. 40 powder .	2½ ounces
Proof Spirit	1 pint

Macerate the rhatany root for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA LARICIS.

Tincture of Larch.

/in 8

Take of

Larch Bark, in No. 40 powder	2½ ounces
Rectified Spirit	1 pint

Macerate the larch bark for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—20 to 30 minims.

TINCTURA LAVANDULÆ COMPOSITA.

Compound Tincture of Lavender.

/in 2/3½

Dispensed with aq dest gives a bright mixture with tap water a muddy mixture.

Synonym.—Spiritus Lavandulæ Compositus.

Take of

Oil of Lavender	1½ fluid drachm
Oil of Rosemary	10 minims
Cinnamon Bark, bruised	150 grains
Nutmeg, bruised	150 grains
Red Sandal-wood	300 grains
Rectified Spirit	2 pints

Macerate the cinnamon, nutmeg, and red sandal-wood in the spirit for seven days in a closed vessel, with occasional agitation; then strain and press, dissolve the oils in the strained tincture, filter, and add sufficient rectified spirit to make two pints.

Dose.—½ to 2 fluid drachms.

Preparation.—Liquor Arsenicalis.

TINCTURA LIMONIS.

Tincture of Lemon Peel.

1 in 8

A far better prep: could be made like the corresponding tinct. Aurant Recens or with a mixture S.V.R 3 Aq 1.

Take of

Fresh Lemon Peel, cut small . .	2½ ounces
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; strain, press, and filter; then add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA LOBELIÆ.

Tincture of Lobelia.

1 in 8

Take of

Lobelia, in No. 40 powder . . .	2½ ounces
Proof Spirit	1 pint

Macerate the lobelia for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—10 minims to ½ fluid drachm.

TINCTURA LOBELIÆ ÆTHEREA.

Ethereal Tincture of Lobelia.

1 in 8

Take of

Lobelia, in coarse powder	2½ ounces
Spirit of Ether	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; then strain, press, filter, and add sufficient spirit of ether to make one pint.

Dose.—10 minims to ½ fluid drachm.

TINCTURA LUPULI.

Tincture of Hop.

1 in 8

Take of

Better if in No 20 powder.

Hop	2½ ounces
Proof Spirit	1 pint

Macerate the hop for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA MYRRHÆ.

Tincture of Myrrh.

1 in 8

Take of

(No 16)

Myrrh, in coarse powder	2½ ounces
Rectified Spirit	1 pint

Macerate the myrrh for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—½ to 1 fluid drachm.

TINCTURA NUCIS VOMICÆ.

Tincture of Nux Vomica.

To estimate Tinct Nuc Vom take 1 oz, add to it 2 fl oz of water + evaporate down until the product measures 2 fl drs. Now add 2 fl drs of water + 20 grs Na_2CO_3 dissolved in a little water then proceed as in the case of extract.

Take of

Extract of Nux Vomica	133 grains
Distilled Water	4 fluid ounces
Rectified Spirit	a sufficiency

Mix sufficient of the spirit with the water to produce twenty fluid ounces, and dissolve the extract in the mixture.

One fluid ounce of this tincture will contain one grain of the alkaloids of nux vomica.

Dose.—10 to 20 minims. Sp. G ·890.

TINCTURA OPII.

Tincture of Opium. 1 in 13⅓

Synonym.—Laudanum.

Take of

Opium, in powder	1½ ounce
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; then strain, press, filter, and add sufficient proof spirit to make one pint.

It contains the soluble matter of 33 grains of the opium,"
"nearly, in 1 fluid ounce; or about 3·3 grains of morphine in"
"one fluid ounce, or about 0·75 per cent. of morphine, or about"
1¼ per cent. of bimeconate of morphine, besides the other"
"alkaloidal salts of opium. It is far better to use moist opium the aroma being more perfectly retained + the morphine more completely extracted. Moist opium of good quality contains as much morphine as the official powdered opium; but it should always be assayed.

Dose.—5 to 40 minims.

Preparations.—Enema Opii; Linimentum Opii.

TINCTURA OPII AMMONIATA.

Ammoniated Tincture of Opium.

Take of

Opium, in powder	100 grains
Saffron, cut small	180 grains
Benzoic Acid	180 grains
Oil of Anise	1 fluid drachm
Strong Solution of Ammonia . .	4 fluid ounces
Rectified Spirit	16 fluid ounces

Macerate for seven days in a well-closed vessel, with occasional agitation; then strain, press, filter, and add sufficient rectified spirit to make one pint.

About 1/16 gr of morphine —

It contains the soluble matter of 0·62 grain of the opium in a fluid drachm, or 5 grains in a fluid ounce.

Dose.—½ to 1 fluid drachm.

To estimate, carefully evap 1 oz over a sand bath in a tared dish.

TINCTURA PODOPHYLLI.

Tincture of Podophyllum.

Take of

Resin of Podophyllum	160 grains .	or . .	1 part
Rectified Spirit .	1 pint	,, . .	54·68 fluid parts

Dissolve and filter.

It contains one grain of the resin in one fluid drachm.

Dose.—15 minims to 1 fluid drachm. Sp. g. ·845.

TINCTURA PYRETHRI.

Tincture of Pellitory. 1 in 5.

Take of

Pellitory Root, in No. 40 powder .	4 ounces
Rectified Spirit	1 pint

Macerate the pellitory for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

TINCTURA QUASSIÆ.

Tincture of Quassia.

1 in 27.

Take of

Quassia Wood, in chips . . .	¾ ounce
Proof Spirit	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; then strain, press, filter, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA QUININÆ.

Tincture of Quinine.[1]

Take of

Hydrochlorate of Quinine . .	160 grains
Tincture of Orange Peel . . .	1 pint

Dissolve the hydrochlorate of quinine in the tincture with the aid of a little heat; then allow the solution to remain for three days in a closed vessel, shaking it occasionally; and afterwards filter.

In the former B.P. sulphate of Quinine was imployed; this was far less soluble & became cloudy by decomposition of $CaSO_4$ the orange peel containing citrate of Ca. In cold weather it was also liable to throw out Quin sulph.

Dose.—½ to 2 fluid drachms. Sp. g. ·940.

TINCTURA QUININÆ AMMONIATA.

Ammoniated Tincture of Quinine.

Take of

Sulphate of Quinine . . .	160 grains — 2% nearly.
Solution of Ammonia . . .	2½ fluid ounces
Proof Spirit	17½ fluid ounces

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[1] This tincture is about one-ninth stronger in alkaloid than the corresponding tincture of the British Pharmacopœia, 1867.

$$([C_{20}H_{24}N_2O_2]_2 H_2SO_4)_2 15H_2O + 4NH_4OH = 4 C_{20}H_{24}N_2O_2 3H_2O + 2(NH_4)_2SO_4 + 7H_2O.$$

Unnecessary.

Dissolve the sulphate of quinine in the spirit with the aid of a little heat, and add the solution of ammonia.

Dose.—½ to 2 fluid drachms.

TINCTURA RHEI.

Tincture of Rhubarb.

1 in 10.

Take of

Rhubarb Root, in No. 20 powder	2 ounces
Cardamom Seeds, bruised	¼ ounce
Coriander Fruit, bruised	¼ ounce
Saffron	¼ ounce
Proof Spirit	1 pint

Macerate the solid ingredients for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—1 to 2 fluid drachms, as a stomachic; 4 to 8 fluid drachms, as a purgative.

TINCTURA SABINÆ.

Tincture of Savin.

1 in 8

Take of

Savin Tops, dried and coarsely powdered	2½ ounces
Proof Spirit	1 pint

Macerate the savin for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—20 minims to 1 fluid drachm.

TINCTURA SCILLÆ.

Tincture of Squill.

1 in 8

Take of

Squill, bruised	2½ ounces
Proof Spirit	1 pint

Macerate the squill for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—10 to 30 minims.

TINCTURA SENEGÆ.

Tincture of Senega.

1 in 8

Take of

Senega Root, in No. 40 powder	2½ ounces
Proof Spirit	1 pint

Macerate the senega for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

B. S. Proctor has shown that the active principle of Senna is only slightly soluble in proof spirit, consequently the preparation is unsatisfactory. (S V R 2 Water 3) would be better.

TINCTURA SENNÆ.

Tincture of Senna.

1 in 8.

Take of

Senna, broken small	2½ ounces
Raisins, freed from seeds	2 ounces
Caraway Fruit, bruised	½ ounce
Coriander Fruit, bruised	½ ounce
Proof Spirit	1 pint

Macerate the solid ingredients for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—1 to 4 fluid drachms.

Preparation.

Mistura Sennæ Composita . 1 fluid drachm in 1 fluid ounce

TINCTURA SERPENTARIÆ.

Tincture of Serpentary.

1 in 8.

Take of

Serpentary Rhizome, in No. 40 powder	2½ ounces
Proof Spirit	1 pint

Macerate the serpentary for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—½ to 2 fluid drachms.

TINCTURA STRAMONII.

Tincture of Stramonium.

1 in 8

Wright + Farr have shown that a tincture prepared with bruised seeds is equally as strong as with powder + is not so loaded with oil.

Take of

Stramonium Seeds, bruised	2½ ounces
Proof Spirit	1 pint

Macerate the stramonium for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—10 to 30 minims.

TINCTURA SUMBUL.

Tincture of Sumbul.

1 in 8.

Take of

Sumbul Root, in No. 40 powder	2½ ounces
Rectified Spirit	1 pint

Macerate the sumbul for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—10 to 30 minims.

TINCTURA TOLUTANA.

Tincture of Tolu.

1 in 8

Take of

Balsam of Tolu	2½ ounces
Rectified Spirit	a sufficiency

Macerate the balsam of tolu in fifteen fluid ounces of the spirit, in a closed vessel, with occasional agitation, for six hours, or until the balsam is dissolved; then filter, and add sufficient rectified spirit to make one pint.

Dose.—20 to 40 minims. Sp. G. .880.

Preparations.

Trochisci Acidi Tannici
Trochisci Morphinæ
Trochisci Morphinæ et Ipecacuanhæ
Trochisci Opii.

TINCTURA VALERIANÆ.

Tincture of Valerian. 1 in 8.

Take of

Valerian Rhizome, in No. 40 powder	2½ ounces
Proof Spirit	1 pint

Macerate the valerian root for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient proof spirit to make one pint.

Dose.—1 to 2 fluid drachms.

TINCTURA VALERIANÆ AMMONIATA.

Ammoniated Tincture of Valerian. 1 in 8.

Take of

Valerian Rhizome, in No. 40 powder	2½ ounces
Aromatic Spirit of Ammonia	1 pint

Macerate for seven days in a well-closed vessel, with occasional agitation; then strain, press, filter, and add sufficient aromatic spirit of ammonia to make one pint.

Dose.—½ to 1 fluid drachm.

TINCTURA VERATRI VIRIDIS.

Tincture of Green Hellebore.

1 in 5.

Take of

Green Hellebore Rhizome, in No. 40 powder	4 ounces
Rectified Spirit	1 pint

Macerate the hellebore for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—5 to 20 minims.

TINCTURA ZINGIBERIS.

Tincture of Ginger.

1 in 8.

Take of

Ginger, in powder	2½ ounces
Rectified Spirit	1 pint

Macerate the ginger for forty-eight hours in fifteen fluid ounces of the spirit, in a closed vessel, agitating occasionally; then transfer to a percolator, and when the fluid ceases to pass, continue the percolation with the remaining five ounces of spirit. Afterwards subject the contents of the percolator to pressure, filter the product, mix the liquids, and add sufficient rectified spirit to make one pint.

Dose.—15 minims to 1 fluid drachm.

TINCTURA ZINGIBERIS FORTIOR.

Strong Tincture of Ginger.

Synonym.—Essence of Ginger.

1 in 2.

Take of

Ginger, in fine powder . . .	10 ounces
Rectified Spirit	a sufficiency

Pack the ginger tightly in a percolator, and pour over it carefully half a pint of the spirit. At the expiration of two hours add more spirit, and let it percolate slowly until one pint of tincture has been collected.

Dose.—5 to 20 minims.

Preparations.

Acidum Sulphuricum Aromaticum .	1 fluid part in 23
// Pilula Scammonii Composita	
Syrupus Zingiberis . .	6 fluid drachms to 1 pint

TRAGACANTHA.

Tragacanth.

N. O. Leguminosæ.

Tissue of pith + medullary rays is gradually alt-d to a compound swelling with water + in this condition exuding spontaneously + from incisions.

A gummy exudation obtained by making incisions in the stem of Astragalus gummifer, *Labill.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 73; and some other species of Astragalus, *Linn.* Western Asia.

Characters and Tests.—In white or somewhat yellowish flaky pieces of varying length and breadth; which are thin, irregularly oblong or roundish, more or less curved, marked on the surface by arched or concentric ridges, somewhat translucent, tough, but rendered more pulverisable at a temperature of 120° Fahr. (48°·9 C.); inodorous and almost tasteless. It is very sparingly soluble in cold water, but swells into a gelatinous mass, which is tinged violet or blue by tincture of iodine.

Preparations.

Confectio Opii . . .	1 part in 120, nearly
,, Sulphuris . .	1 part in 246
Glycerinum Tragacanthæ .	3 parts in 20, by weight
Mucilago Tragacanthæ . .	60 grains to 10 fluid ounces
Pulvis Opii Compositus .	1 part in 30
,, Tragacanthæ Compositus	1 part in 6

P.C. Tragacanthin or Bassorin + the Ca compd. of a gummic acid not identical with oxalic acid. Starch fragments of cells.

Trochiscus. A hard disc or other conveniently shaped mass, consisting of a saccharine or similar basis mixed with active medicament intending to be slowly sucked, so as to, in many cases, obtain local action on the throat & neighbouring parts.

TROCHISCI ACIDI BENZOICI.

Benzoic Acid Lozenges.

Take of

Benzoic Acid	360 grains
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	a sufficiency

Mix the benzoic acid, sugar, and gum, add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry them in a hot-air chamber at a moderate temperature.

Each lozenge contains half a grain of benzoic acid.

Dose.—1 to 5 lozenges.

TROCHISCI ACIDI TANNICI.

Tannic Acid Lozenges.

Take of

Tannic Acid	360 grains
Tincture of Tolu	½ fluid ounce
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	1 fluid ounce

Dissolve the tannic acid in the water; add, first, the tincture of tolu, previously mixed with the mucilage, then the gum and the sugar, also previously well mixed. Form the whole into a proper mass; divide it into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains half a grain of tannic acid.

Dose.—1 to 6 lozenges.

TROCHISCI BISMUTHI.

Bismuth Lozenges.

Take of

Subnitrate of Bismuth	1440 grains
Carbonate of Magnesium	4 ounces
Precipitated Carbonate of Calcium	6 ounces
Refined Sugar	29 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Rose Water	a sufficiency

Mix the dry ingredients, then add the mucilage, and form the whole into a proper mass with rose water. Divide the mass into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains two grains of subnitrate of bismuth.

Dose.—1 to 6 lozenges.

Mag carb 2½ grs in each nearly
Calc " 4 " " " "

TROCHISCI CATECHU.

Catechu Lozenges.

Take of

Catechu, in powder	720 grains
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	a sufficiency

Mix the catechu, sugar, and gum, and add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains one grain of catechu.

Dose.—1 to 6 lozenges.

TROCHISCI FERRI REDACTI.

Reduced Iron Lozenges.

Take of

Reduced Iron	720 grains
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	1 fluid ounce, or a sufficiency

Mix the iron, sugar, and gum, and add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains one grain of reduced iron.

Dose.—1 to 6 lozenges.

TROCHISCI IPECACUANHÆ.

Ipecacuanha Lozenges.

Take of

Ipecacuanha, in powder	180 grains
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	1 fluid ounce, or a sufficiency

Mix the powders and add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains a quarter of a grain of ipecacuanha.

Dose.—1 to 3 lozenges.

TROCHISCI MORPHINÆ.

Morphine Lozenges.

Take of

Hydrochlorate of Morphine	20 grains
Tincture of Tolu	½ fluid ounce
Refined Sugar, in powder	24 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	a sufficiency
Distilled Water	½ fluid ounce

Dissolve the hydrochlorate of morphine in the water; add this solution to the tincture of tolu, previously mixed with two fluid ounces of the mucilage; then add the gum and sugar, previously mixed, and more mucilage if necessary to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains one thirty-sixth of a grain of hydrochlorate of morphine.

Dose.—1 to 6 lozenges.

TROCHISCI MORPHINÆ ET IPECACUANHÆ.

Morphine and Ipecacuanha Lozenges.

Take of

Hydrochlorate of Morphine	20 grains
Ipecacuanha, in fine powder	60 grains
Tincture of Tolu	½ fluid ounce
Refined Sugar, in powder	24 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	a sufficiency
Distilled Water	½ fluid ounce

Dissolve the hydrochlorate of morphine in the water; add this solution to the tincture of tolu, previously mixed with two fluid ounces of the mucilage; then add the ipecacuanha, gum, and sugar, previously mixed, and more mucilage if necessary to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains one thirty-sixth of a grain of hydrochlorate of morphine, and one-twelfth of a grain of ipecacuanha.

Dose.—1 to 6 lozenges.

TROCHISCI OPII.

Opium Lozenges.

Take of

Extract of Opium	72 grains
Tincture of Tolu	½ fluid ounce
Refined Sugar, in powder	16 ounces
Gum Acacia, in powder	2 ounces
Extract of Liquorice	6 ounces
Distilled Water	a sufficiency

Add the extract of opium, first softened by means of a little water, and the tincture of tolu, to the extract of liquorice heated in a water-bath. When the mixture is reduced to a proper consistence, remove it to a slab, add the sugar and gum previously rubbed together, and mix thoroughly. Divide the mass into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains one-tenth of a grain of extract of opium, or one-fiftieth of a grain of morphine.

Dose.—1 to 6 lozenges.

TROCHISCI POTASSII CHLORATIS.

Chlorate of Potassium Lozenges.

Take of

Chlorate of Potassium, in powder	3600 grains
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	1 fluid ounce, or a sufficiency

Mix the powders and add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains five grains of chlorate of potassium.

Dose.—1 to 6 lozenges.

TROCHISCI SANTONINI.

Santonin Lozenges.

Take of

Santonin	720 grains
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	a sufficiency

Mix the santonin, sugar, and gum; add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains one grain of santonin.

Dose.—1 to 6 lozenges.

TROCHISCI SODII BICARBONATIS.

Bicarbonate of Sodium Lozenges.

Take of

Bicarbonate of Sodium, in powder	3600 grains
Refined Sugar, in powder	25 ounces
Gum Acacia, in powder	1 ounce
Mucilage of Gum Acacia	2 fluid ounces
Distilled Water	1 fluid ounce

Mix the powders, and add the mucilage and water to form a proper mass. Divide into 720 lozenges, and dry these in a hot-air chamber at a moderate temperature.

Each lozenge contains five grains of bicarbonate of sodium.

Dose.—1 to 6 lozenges.

Unguentum A mixture or solution of one or more active substances in a soft basis, as lard, which melts at or near the temp of the body & used as an external application.

UNGUENTUM ACIDI BORICI.

Ointment of Boric Acid.

/m 7.

Synonym.—Ointment of Boracic Acid.

Take of

Boric Acid, in fine powder	2½ ounces	or . 1 part
Soft Paraffin	10 ounces	,, . 4 parts
Hard Paraffin	5 ounces	,, . 2 parts

Melt the hard and soft paraffins together, and add the boric acid distributed over the surface of the liquid by passing it through a sieve, then stir them together constantly until cold.

UNGUENTUM ACIDI CARBOLICI.

Ointment of Carbolic Acid.

/m 19.

Take of

Carbolic Acid	60 grains	or . . 1 part
Soft Paraffin	720 grains	,, . . 12 parts
Hard Paraffin	360 grains	,, . . 6 parts

Melt, and stir together constantly until cold.

UNGUENTUM ACIDI SALICYLICI.

Ointment of Salicylic Acid.

/m 28.

Take of

Salicylic Acid	60 grains	or . . 1 part
Soft Paraffin	1080 grains	,, . . 18 parts
Hard Paraffin	540 grains	,, . . 9 parts

Melt the hard and soft paraffins together, add the salicylic acid, and stir the whole constantly until cold.

UNGUENTUM ACONITINÆ.

Ointment of Aconitine.

1 in 59.

Take of

Aconitine	8 grains	or	1 part
Rectified Spirit	½ fluid drachm	,,	3½ fluid parts
Benzoated Lard	1 ounce	,,	55 parts

Dissolve the aconitine in the spirit, add the lard, and mix thoroughly.

UNGUENTUM ANTIMONII TARTARATI.

Ointment of Tartarated Antimony.

1 in 5.

Take of

Tartarated Antimony, in fine powder	¼ ounce	or	1 part
Simple Ointment	1 ounce	,,	4 parts

Mix thoroughly.

UNGUENTUM ATROPINÆ.

Ointment of Atropine.

1 in 59.

Take of

Atropine	8 grains	or	1 part
Rectified Spirit	½ fluid drachm	,,	3½ fluid parts
Benzoated Lard	1 ounce	,,	55 parts

Dissolve the atropine in the spirit, add the lard, and mix thoroughly.

UNGUENTUM BELLADONNÆ.

Ointment of Belladonna.

1 in 10.

Take of

Alcoholic Extract of Belladonna	50 grains	or	1 part
Benzoated Lard	1 ounce	,,	9 parts

Mix thoroughly.

UNGUENTUM CALAMINÆ.

Ointment of Calamine.

1 in 6

Take of

Prepared Calamine . . .	1 ounce . .	or . .	1 part
Benzoated Lard . . .	5 ounces . .	,, . .	5 parts

Mix thoroughly.

UNGUENTUM CANTHARIDIS.

Ointment of Cantharides.

1 in 7 (nearly)

Take of

Cantharides Yellow Wax } of each	1 ounce	or . .	1 part
Olive Oil . .	6 fluid ounces .	,, . .	6 fluid parts

Infuse the cantharides in the oil, in a covered vessel, for twelve hours, then place the vessel in boiling water for fifteen minutes, strain through muslin with strong pressure, add the product to the wax previously melted, and stir constantly while the mixture cools.

UNGUENTUM CETACEI.

Ointment of Spermaceti.

1 in 5·4 nearly.

Take of

Spermaceti . . .	5 ounces	or . .	10 parts
White Wax . . .	2 ounces	,, . .	4 parts
Almond Oil . . .	1 pint . .	,, . .	40 fluid parts
Benzoin, in coarse powder	½ ounce .	,, . .	1 part

Melt together the spermaceti, wax, and almond oil; add the benzoin, and, frequently stirring the mixture, continue the application of heat for two hours; remove from the source of heat, take out the residual benzoin by straining, and stir constantly until quite cold.

UNGUENTUM CHRYSAROBINI.

Ointment of Chrysarobin.

1 in 25.

Take of

Chrysarobin	20 grains	or	1 part
Benzoated Lard	480 grains	,,	24 parts

Melt the lard, add the chrysarobin, and stir them together, maintaining a moderate temperature, so as to promote solution; then remove the source of heat, and stir until cold.

UNGUENTUM CREASOTI.

Ointment of Creasote.

1 in 9.

Take of

Creasote	1 fluid drachm	or	1 fluid part
Simple Ointment	1 ounce	,,	8 parts

Mix thoroughly.

UNGUENTUM ELEMI.

Balsamum Arcaei

Ointment of Elemi.

1 in 5.

Take of

Elemi	$\frac{1}{4}$ ounce	or	1 part
Simple Ointment	1 ounce	,,	4 parts

Melt, strain through flannel, and stir constantly until the ointment solidifies.

UNGUENTUM EUCALYPTI.

Ointment of Eucalyptus.

1 in 5.

Take of

Oil of Eucalyptus, by weight	1 ounce	or	1 part
Soft Paraffin Hard Paraffin } of each	2 ounces	,,	2 parts

Melt the hard and soft paraffins together, add the oil, and stir until cold.

UNGUENTUM GALLÆ.

Ointment of Galls.

1 in 6½.

Take of

Galls, in fine powder	80 grains	or	1 part
Benzoated Lard	1 ounce	,,	5½ parts

Mix thoroughly.

Preparation.—Unguentum Gallæ cum Opio.

UNGUENTUM GALLÆ CUM OPIO.

Ointment of Galls and Opium.

1 in 14·6.

Take of

Ointment of Galls	1 ounce	or	13½ parts
Opium, in powder	32 grains	,,	1 part

Mix thoroughly.

UNGUENTUM GLYCERINI PLUMBI SUBACETATIS.

1 in 6⅓.

Ointment of Glycerine of Subacetate of Lead.

Take of

Glycerine of Subacetate of Lead	4½ ounces	or	1 part
Soft Paraffin	18 ounces	,,	4 parts
Hard Paraffin	6 ounces	,,	1⅓ parts

Melt the hard and soft paraffins together; then add the glycerine of subacetate of lead, and stir until the mixture has cooled.

UNGUENTUM HYDRARGYRI.

Ointment of Mercury.

1 in 2 1/16.

Take of

Mercury Prepared Lard } of each	1 pound	or	16 parts
Prepared Suet	1 ounce	,,	1 part

Rub them together until metallic globules cease to be visible.

Preparations.

Linimentum Hydrargyri | Suppositoria Hydrargyri
Unguentum Hydrargyri Compositum

UNGUENTUM HYDRARGYRI AMMONIATI.

/in 10

Ointment of Ammoniated Mercury.[1]

Synonym.—Ointment of White Precipitate.

Take of

Ammoniated Mercury	50 grains	or	1 part
Simple Ointment	450 grains	,,	9 parts

Mix thoroughly.

UNGUENTUM HYDRARGYRI COMPOSITUM.

1 of Ung Hyd
¼ Camph } in 24.

Compound Ointment of Mercury.

Scotts Ointment.

If not carefully made the wax will separate, also the mercury if too much heat be used. If a mortar is used it must be thoroughly warmed with hot water (also the pestle.)

Take of

Ointment of Mercury	6 ounces	or	6 parts
Yellow Wax } of each Olive Oil }	3 ounces	,,	3 parts
Camphor	1½ ounce	,,	1½ part

Mix the wax and oil by the aid of heat, then incorporate the ointment of mercury, and, when the mixture is nearly cold, add the camphor in powder; stir the whole thoroughly together.

UNGUENTUM HYDRARGYRI IODIDI RUBRI.

Ointment of Red Iodide of Mercury.

/in 28·3.

Take of

Red Iodide of Mercury, in fine powder	16 grains	or	1 part
Simple Ointment	1 ounce	,,	27¼ parts

Mix thoroughly.

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[1] The strength is 10 per cent. It was about 12 per cent. in B. P. 1867.

UNGUENTUM HYDRARGYRI NITRATIS.

Ointment of Nitrate of Mercury. 1 in 8.

Synonym.—Unguentum Citrinum.

Take of

Mercury, by weight .	4 ounces	or . .	1 part
Nitric Acid . .	12 fluid ounces . .	,, . .	3 fluid parts
Prepared Lard . .	15 ounces	,, . .	3¾ parts
Olive Oil . .	32 fluid ounces . .	,, . .	8 fluid parts

Dissolve the mercury in the nitric acid with the aid of a little heat; melt the lard in the oil, by a steam or water bath, in a porcelain vessel capable of holding six times the quantity; and, while the mixture is at about 212° F. (100° C.), add the solution of mercury, also at about the same temperature, mixing them thoroughly. If the mixture do not froth up, increase the heat till this occurs. Keep it stirred until it is cold.

If too much heat is used the oint: darkens in colour; if too little the action continues after preparation causing the oint . froth. It is advisable to continue the heat with constant stirring for about 10 mins after adding the mercuric nitrate.

Preparation.—Unguentum Hydrargyri Nitratis Dilutum.

Mercuric nitrate + elaidic acid are formed. If the ultimate product is green it is probably due to the lard or oil being adulterated with croton seed oil.

UNGUENTUM HYDRARGYRI NITRATIS DILUTUM. 1 in 3.

Diluted Ointment of Nitrate of Mercury.

Take of

Nitrate of Mercury Ointment.	1 ounce	. . or . .	1 part
Soft Paraffin	2 ounces . .	,, . .	2 parts

Mix.

UNGUENTUM HYDRARGYRI OXIDI RUBRI. 1 in 8.

Ointment of Red Oxide of Mercury.

Take of

Red Oxide of Mercury, in very fine powder . .	62 grains	. . or . .	1 part
Hard Paraffin . . .	¼ ounce . . .	,, . .	1¾ part
Soft Paraffin	¾ ounce . . .	,, . .	5¼ parts

Melt the hard and soft paraffins together, and when the mixture in cooling begins to thicken add the oxide of mercury in a glass or porcelain mortar, and mix the whole thoroughly.

UNGUENTUM HYDRARGYRI SUBCHLORIDI.

1 in 6½

Ointment of Subchloride of Mercury.

Take of

Subchloride of Mercury .	80 grains .	or . .	1 part
Benzoated Lard . .	1 ounce . .	,, . .	5½ parts

Mix thoroughly.

UNGUENTUM IODI.

Ointment of Iodine.

1 in 31.

Take of

Iodine . . .	32 grains	or . .	7 parts
Iodide of Potassium	32 grains	,, . .	7 parts
Glycerine . .	1 fluid drachm . .	,, . .	12 fluid parts
Prepared Lard .	2 ounces	,, . .	191 parts

solvent action

Rub the iodine and the iodide of potassium well together, with the glycerine, in a glass or porcelain mortar, add the lard gradually, and mix thoroughly.

UNGUENTUM IODOFORMI.

Ointment of Iodoform.

1 in 10.

Take of

Iodoform	1 ounce . .	or . .	1 part
Benzoated Lard . . .	9 ounces . .	,, . .	9 parts

Melt the lard at a low temperature, add the iodoform, and stir together until dissolved and finally cooled.

UNGUENTUM PICIS LIQUIDÆ.

Ointment of Tar.

5 in 7.

Take of

Tar	5 ounces	. . or . .	2½ parts
Yellow Wax . . .	2 ounces	. . ,, . .	1 part

Melt the wax at a low temperature, add the tar, and stir the mixture briskly while it cools.

UNGUENTUM PLUMBI ACETATIS.

Ointment of Acetate of Lead.

1 in 37½.

Take of

Acetate of Lead, in fine powder .	12 grains	. or . .	2 parts
Benzoated Lard . . .	1 ounce	. . ,, . .	73 parts

Mix thoroughly.

UNGUENTUM PLUMBI CARBONATIS.

Ointment of Carbonate of Lead.

1 in 8

Take of

Carbonate of Lead, in fine powder .	62 grains	. or .	1 part
Simple Ointment	1 ounce	. . ,, .	7 parts

Mix thoroughly.

UNGUENTUM PLUMBI IODIDI.

Ointment of Iodide of Lead.

1 in 8.

Take of

Iodide of Lead, in fine powder.	62 grains	. . or . .	1 part
Simple Ointment . . .	1 ounce	. . . ,, . .	7 parts

Mix thoroughly.

In preparing ung pot sulph or sulph sod it is necessary to reduce the chemical to an impalpably fine powder, & having reserved a small portion of the paraffinum molle triturate with this until perfectly smooth. Then add this to the remainder of the paraffins previously melted.

UNGUENTUM POTASSÆ SULPHURATÆ.

Ointment of Sulphurated Potash.

1 in 15½ nea

Take of

Sulphurated Potash	30 grains	or	5 parts
Hard Paraffin	¼ ounce	,,	18 parts
Soft Paraffin	¾ ounce	,,	55 parts

Triturate the sulphurated potash in a glass or porcelain mortar and gradually add the melted mixture of the hard and soft paraffins, rubbing them together until the ointment is perfectly smooth and free from grittiness.

This ointment should be recently prepared.

UNGUENTUM POTASSII IODIDI.

Ointment of Iodide of Potassium.

1 in 8¾ near

The object of adding K_2CO_3 is to prevent the liberation of iodine by the fatty acids, this is only not imperfectly attained $Na_2S_2O_3$ would answer the purpose better.

Take of

Iodide of Potassium	64 grains	or	16 parts
Carbonate of Potassium	4 grains	,,	1 part
Water	1 fluid drachm	,,	14 fluid parts
Benzoated Lard	1 ounce	,,	110 parts

Dissolve the iodide of potassium and carbonate of potassium in the water, and mix thoroughly with the lard.

UNGUENTUM RESINÆ.

Ointment of Resin.

1 in 3¾.

Take of

Resin, in coarse powder	8 ounces	or	4 parts
Yellow Wax	4 ounces	,,	2 parts
Simple Ointment	16 ounces	,,	8 parts
Almond Oil	2 fl. ounces	,,	1 fl. part

Melt at a low temperature, strain the mixture, while hot, through flannel, and stir constantly while it cools.

UNGUENTUM SABINÆ.

Ointment of Savin.

1 in 2½.

Take of

Fresh Savin Tops, bruised.	8 ounces . . .	or . .	4 parts
Yellow Wax . . .	3 ounces . . .	,, . .	1½ part
Benzoated Lard . .	16 ounces . .	,, . .	8 parts

Melt the lard and the wax together on a water-bath, add the savin, and digest for twenty minutes. Then remove the mixture, and express through calico.

UNGUENTUM SIMPLEX.

Simple Ointment.

Take of

White Wax . . .	2 ounces.	or . .	1 part
Benzoated Lard . .	3 ounces.	,, . .	1½ part
Almond Oil . . .	3 fluid ounces . .	,, . .	1½ fl. part

Melt the wax and lard in the oil on a water-bath; then remove the mixture, and stir constantly while it cools.

Preparations.

Unguentum Antimonii Tartarati
,, Creasoti
,, Elemi
,, Hydrargyri Ammoniati
,, ,, Iodidi Rubri
,, Plumbi Carbonatis
,, ,, Iodidi
,, Resinæ
,, Hamamelidis.

UNGUENTUM STAPHISAGRIÆ.

Ointment of Stavesacre.

1 in 2½ about.

Take of

Stavesacre Seeds . .	4 ounces . .	or . .	1 part
Benzoated Lard. . .	8 ounces . .	,, . .	2 parts

Crush the seeds and macerate them in the lard kept melted over a water-bath for two hours. Strain through calico, and set aside to cool.

This ointment contains about ten per cent. of oil of stavesacre. Also contains alkaloids.

UNGUENTUM SULPHURIS.

Ointment of Sulphur.

1 in 5.

Take of

Sublimed Sulphur	1 ounce	or	1 part
Benzoated Lard	4 ounces	,,	4 parts

Mix thoroughly.

UNGUENTUM SULPHURIS IODIDI.

Ointment of Iodide of Sulphur.

1 in 15½ nearly

Take of

Iodide of Sulphur	30 grains	or	5 parts
Hard Paraffin	¼ ounce	,,	18 parts
Soft Paraffin	¾ ounce	,,	55 parts

Triturate the iodide of sulphur in a glass or porcelain mortar, and gradually add the melted mixture of the hard and soft paraffins, rubbing them together until the ointment is perfectly cold and free from grittiness.

UNGUENTUM TEREBINTHINÆ.

Ointment of Turpentine.

1 in 2⅛.

Take of

Oil of Turpentine	1 fluid ounce	or	8 fluid parts
Resin, in coarse powder	54 grains	,,	1 part
Yellow Wax	½ ounce	,,	4 parts
Prepared Lard	½ ounce	,,	4 parts

Dissolve the resin in the warm Ol Tereb: + add this to the wax + lard previously melted in a water bath.

Melt the ingredients together by the heat of a steam- or water-bath. Remove the vessel, and stir the mixture constantly while it cools. till stiff.

UNGUENTUM VERATRINÆ.

Ointment of Veratrine.

1 in 63.

Take of

Veratrine	8 grains	or	1 part
Hard Paraffin	¼ ounce	,,	14 parts
Soft Paraffin	¾ ounce	,,	41 parts
Olive Oil	1 fluid drachm	,,	7 parts

Rub the veratrine and the oil together; melt the hard and soft paraffins, and when in cooling they begin to thicken, mix the whole thoroughly in a mortar until cold.

UNGUENTUM ZINCI.

Ointment of Zinc.

1 in 6½.

Take of

Oxide of Zinc	80 grains	or	2 parts
Benzoated Lard	1 ounce	,,	11 parts

Add the oxide of zinc to the benzoated lard, previously melted at a low temperature, and stir the mixture constantly while it cools.

UNGUENTUM ZINCI OLEATI.

Ointment of Oleate of Zinc.

Take of

Oleate of Zinc	1 ounce	or	1 part
Soft Paraffin	1 ounce	,,	1 part

Mix by aid of a little heat, and stir until nearly cold.

UVÆ.

Raisins.

Synonym.—Uvæ Passæ. N.O. Ampelideæ.

The ripe fruit of Vitis vinifera, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. i. plate 66. Dried by the heat of the sun; or partly by the sun's heat and partly by artificial heat. Imported from Spain.

Hab: W. Asia
ultd: S. Europe +
in California.

Characters.—More or less shrivelled, compressed, smooth, free from sugary or saline incrustation; agreeably fragrant, and with a soft very sweet pulp.

Preparations.

Tinctura Cardamomi Composita | Tinctura Sennæ

P.C. Tannin coloring matter; in epicarp.
Pulp. Grape sugar Pot Tart; Calc Tart; little malic acid mucilage.

UVÆ URSI FOLIA.

Bearberry Leaves.

N.O. Ericaceæ.

The dried leaves of Arctostaphylos Uva-ursi, *Spreng.*; *Bentl. and Trim. Med. Pl.* vol. iii. plate 163. From indigenous plants. N. Hemisphere in dry + sandy or rocky places.

Characters and Test.—Very shortly stalked. Obovate or spathulate, coriaceous, from half an inch to about three-fourths of an inch long, smooth and shining on the upper surface, paler coloured and minutely reticulated beneath; margins entire and slightly revolute. Odour faintly tea-like when powdered; taste very astringent. The infusion gives a bluish-black precipitate with perchloride of iron.

Preparation.—Infusum Uvæ Ursi, 1 ounce to 1 pint.

P.C. 6 to 7% Tannin; gallic acid arbutin ericoline ursone 3% ash.

VALERIANÆ RHIZOMA.

Valerian Rhizome.

N.O. Valerianaceæ. *Synonym.*—Valerianæ Radix.

The dried rhizome and rootlets of Valeriana officinalis, *Linn.*; *Bentl. and Trim. Med. Pl.* vol. ii. plate 146. Collected in autumn from plants growing wild or cultivated in Britain. Derbyshire + Salisbury.

Characters and Test.—A short erect rhizome, entire or sliced, dark yellowish-brown externally, and giving off numerous

P.C. ½ to 2% Vol: oil Valerianic, formic, acetic, malic acids; tannin resin starch etc.

A Vapor. A solution or admixture of volatile drugs which is added to boiling or hot water contained in a suitable apparatus so that the steam which arises may be inhaled in order to obtain local action on the air passages. The liquid used is also called in dispensing inhalation drops "Instillatio"

slender brittle shrivelled rootlets three or four inches long, of the same colour as the rhizome; rhizome and rootlets whitish internally. Odour developed in the process of drying, strong, peculiar, and disagreeable; taste unpleasant, camphoraceous and slightly bitter. Yields volatile oil and valerianic acid when distilled with water.

Dose, in powder.—10 to 30 grains.

Preparations.

Infusum Valerianæ . . .	220 grains to 1 pint
Tinctura Valerianæ . . .	2½ ounces to 1 pint
,, ,, Ammoniata	2½ ounces to 1 pint

VAPOR ACIDI HYDROCYANICI.

Inhalation of Hydrocyanic Acid.

Take of

Diluted Hydrocyanic Acid . .	10 to 15 minims
Water (cold)	1 fluid drachm

Mix in a suitable apparatus, and let the vapour that arises be inhaled.

VAPOR CHLORI.

Inhalation of Chlorine.

Take of

Chlorinated Lime	2 ounces
Water (cold)	a sufficiency

Put the powder into a suitable apparatus, moisten it with the water, and let the vapour that arises be inhaled.

VAPOR CONINÆ.

Inhalation of Conine.

Take of

Juice of Hemlock . . .	½ fluid ounce
Solution of Potash . . .	1 fluid drachm
Distilled Water	1 fluid ounce

Added to liberate free conine, from the extract which exists in combination with malic acid.

Mix. Put twenty minims of the mixture on a sponge, in a suitable apparatus, so that the vapour of hot water passing over it may be inhaled.

VAPOR CREASOTI.

Inhalation of Creasote.

Take of

Creasote	12 minims
Boiling Water	8 fluid ounces

Mix the creasote and water in an apparatus so arranged that air may be made to pass through the solution, and may afterwards be inhaled.

VAPOR IODI.

Inhalation of Iodine.

Take of

Tincture of Iodine . . .	1 fluid drachm
Water	1 fluid ounce

Mix in a suitable apparatus which can be gently heated, and let the vapour that arises be inhaled.

VAPOR OLEI PINI SYLVESTRIS.

Inhalation of Fir-wool Oil.

Take of

Fir-wool Oil	40 minims
Light Carbonate of Magnesium .	20 grains
Water	a sufficiency

The magnesia serves to keep the oil in a finely divided state.

Rub the fir-wool oil with the carbonate of magnesium, and gradually add sufficient water to produce one fluid ounce.

Put one fluid drachm of this mixture with half a pint of cold water and half a pint of boiling water into an apparatus so arranged that air may be made to pass through the solution and may afterwards be inhaled.

VERATRI VIRIDIS RHIZOMA.

Green Hellebore Rhizome.

Synonym.—Veratri Viridis Radix. N.O. Melanthaceæ.

The dried rhizome and rootlets of Veratrum viride, *Soland.*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 286. Indig to swampy districts of Canada + U.S.A.

Characters.—Entire, or transversely or longitudinally sliced or divided, and either with or without attached rootlets. When entire from one to two inches or more in length, and three-quarters of an inch or more in diameter, erect, obconical, obtuse or truncated at the apex, dark brown externally, whitish within. Frequently bearing at its upper end the concentrically arranged remains of leaves, and giving off on all sides numerous much-shrivelled yellowish-white rootlets several inches long; or the latter are detached and mixed with it, in which case the rhizome is marked with corresponding scars. Inodorous, but exciting sneezing when powdered; taste bitterish and very acrid.

Preparation.—Tinctura Veratri Viridis, 4 ounces to 1 pint. Dose 20 m.

P.C. Jervine pseudo-jervine Rubi-jervine Cevadine Veratrine Jervic acid
Also resin + starch

VERATRINA.

Veratrine.

Synonym.—Veratria.

An alkaloid or mixture of alkaloids obtained from Cevadilla; not quite pure. It may be obtained by the following process:—

Take of

Cevadilla		2 pounds
Distilled Water	of each	a sufficiency
Rectified Spirit	of each	a sufficiency
Solution of Ammonia	of each	a sufficiency
Hydrochloric Acid	of each	a sufficiency
Purified Animal Charcoal		60 grains

Macerate the cevadilla with half its weight of boiling distilled water in a covered vessel for twenty-four hours. Remove the cevadilla, squeeze it, and dry it thoroughly in a

Percolate contains Veratrine resin oil + colouring matter.

This effects pptn of much oil + resin.

warm place. Beat it now in a mortar, and separate the seeds from the capsules by brisk agitation in a deep narrow vessel, or by winnowing it gently on a table with a sheet of paper. Grind the seeds in a coffee-mill, and form them into a thick paste with rectified spirit. Pack this firmly in a percolator, and pass rectified spirit through it till the spirit ceases to be coloured. Concentrate the spirituous solution by distillation, so long as no deposit forms, and pour the residue, while hot, into twelve times its volume of cold distilled water. Filter through calico, and wash the residue on the filter with distilled water, till the fluid ceases to precipitate with ammonia. To the united filtered liquids add the ammonia in slight excess, let the precipitate completely subside, pour off the supernatant fluid, collect the precipitate on a filter, and wash it with distilled water till the fluid passes colourless. Diffuse the moist precipitate through twelve fluid ounces of distilled water, and add gradually with diligent stirring sufficient hydrochloric acid to make the fluid feebly but persistently acid. Then add the animal charcoal, digest with a little heat for twenty minutes, filter, and allow the liquid to cool. Add ammonia in slight excess, and, when the precipitate has completely subsided, pour off the supernatant liquid, collect the precipitate on a filter, and wash it with cold distilled water till the washings cease to be affected by nitrate of silver acidulated with nitric acid. Lastly, dry the precipitate, first by imbibition, with filtering paper, and then by the application of warmth.

Characters and Tests.—Pale grey, amorphous, without smell, but, even in the most minute quantity, powerfully irritating the nostrils; strongly and persistently bitter, and highly acrid; insoluble in water, soluble in spirit, in ether, and in diluted acids, leaving traces of an insoluble brown resinoid matter. It dissolves in nitric acid, yielding a yellow solution, and in sulphuric acid forming a deep red solution which exhibits a green fluorescence by reflected light. Warmed with hydrochloric acid, it dissolves with production of a blood-red colour. Heated with access of air, it melts into a yellow liquid, and at length burns away, leaving no residue. It is an active poison.

Preparation.—Unguentum Veratrinæ, 7 grains to 1 ounce.

Vinum a solution of the soluble parts of a drug in wine.

VINUM ALOES.

Wine of Aloes.

Take of

Socotrine Aloes	1½ ounce
Cardamom Seeds, bruised	80 grains
Ginger, in coarse powder	80 grains
Sherry	2 pints

Macerate for seven days in a closed vessel, with occasional agitation; filter the liquor, and add sufficient sherry to make two pints.

Dose.—1 to 2 fluid drachms.

VINUM ANTIMONIALE.

Antimonial Wine.

Take of

Tartarated Antimony	40 grains	or	1 part
Sherry	1 pint	,,	219 fluid parts

Dissolve, and filter if necessary.

Dose.—5 minims to 1 fluid drachm.

It is well to dissolve the Antim Tart in a little of the sherry previously heated nearly to boiling & add to remainder of sherry.

VINUM AURANTII.

Orange Wine.

Wine made in Britain, by the fermentation of a saccharine solution to which the fresh peel of the bitter orange has been added.

Characters and Tests.—A vinous liquid, having a golden sherry colour, and a taste and aroma derived from the bitter-orange peel. It contains 10 to 12 per cent. of alcohol, and is but slightly acid to test-paper.

Preparations.

Vinum Ferri Citratis	Vinum Quininæ

VINUM COLCHICI.

Wine of Colchicum.

If finely powdered filtration is almost impossible owing to the abundance of starch in the corm.

Take of

Colchicum Corm, sliced, dried, and reduced to No. 20 powder	4 ounces
Sherry	1 pint

Macerate the colchicum in the wine for seven days in a closed vessel, with occasional agitation, press and strain through calico; then add sufficient sherry to make one pint.

Dose.—10 to 30 minims.

VINUM FERRI.

Wine of Iron.

This prep: contains about $\frac{1}{4}$ to $\frac{1}{3}$ grain of iron in 100 fl grs when finished. It should not be allowed to stand beyond the specified time as it begins to deposit. The iron is only partially immersed to promote oxidation. The acidity of the wine causes solution of a small quantity of iron as tartrate & acetate

↗ Cannot be sold without a wine license. Vide Ph J 9.7.94.

Take of

Iron Wire	1 ounce	or	1 part
Sherry	1 pint	,,	20 fluid parts

Macerate for thirty days in a closed vessel, the iron being almost, but not quite, wholly immersed in the wine, and the vessel frequently shaken, and the stopper removed; then filter.

Dose.—1 to 4 fluid drachms.

VINUM FERRI CITRATIS.

Wine of Citrate of Iron.

Take of

Citrate of Iron and Ammonium	160 grains	or	1 part
Orange Wine	1 pint	,,	55 fl. parts nearly

Dissolve, and let the solution remain for three (1) days in a closed vessel, shaking it occasionally; afterwards filter.

Dose.—1 to 4 fluid drachms.

(1) By this means trifling deposits of tannate of iron are formed & removed.

VINUM IPECACUANHÆ.

Wine of Ipecacuanha.

Take of

Ipecacuanha, coarsely powdered	1 ounce
Acetic Acid	1 fluid ounce
Distilled Water	a sufficiency
Sherry	1 pint

The drug should be macerated in dilute acid as the strong renders the root so spongy + slimy + viscous as to retard percolation. The remainder of the acid may be used in the percolation.

Macerate the ipecacuanha in the acetic acid for twenty-four hours. Transfer to a percolator, and pass sufficient distilled water through to produce one pint of liquor. Evaporate the product to dryness over a water-bath. Powder the residue and macerate it in the sherry for forty-eight hours, with occasional agitation, and filter.

Dose.—5 to 40 minims as an expectorant; 3 to 6 fluid drachms as an emetic.

VINUM OPII.

Wine of Opium.

Take of

Extract of Opium	1 ounce	or	1 part
Cinnamon Bark, bruised	75 grains	,,	$\frac{1}{6}$ part
Cloves, bruised	75 grains	,,	$\frac{1}{6}$ part
Sherry	1 pint	,,	20 fluid parts

Macerate for seven days in a closed vessel, with occasional agitation, and filter.

It contains 22 grains of extract of opium, nearly, in 1 fluid ounce. Each fluid drachm contains about half a grain of morphine.

Dose.—10 to 40 minims.

VINUM QUININÆ.

Wine of Quinine.

Take of

Sulphate of Quinine	20 grains	or	1 part
Citric Acid	30 grains	,,	$1\frac{1}{2}$ part
Orange Wine	1 pint	,,	438 fluid parts

Dissolve, first the citric acid, and then the sulphate of quinine, in the wine; allow the solution to remain for three(1) days in a closed vessel, shaking it occasionally; and afterwards filter.

Each fluid ounce contains one grain of sulphate of quinine.((

Dose.—½ to 1 fluid ounce.

(1) By this means trifling deposits of kinate of quinine are formed & removed.

The citric acid assists sol: of the quin: sulph: which although sparingly sol: in water is readily sol: in weak acid liquids

VINUM RHEI.

Wine of Rhubarb.

Take of

Rhubarb Root, in coarse powder . .	1½ ounce
Canella Bark, in coarse powder . .	60 grains
Sherry	1 pint

Macerate for seven days in a closed vessel, with occasional agitation; then strain, press, filter, and add sufficient sherry to make one pint.

Dose.—1 to 2 fluid drachms.

VINUM XERICUM.

Sherry.

A Spanish wine.

Characters.—Pale yellowish-brown, containing about seventeen per cent. of alcohol.

Preparations.

Vinum Aloes
,, Antimoniale
,, Colchici
Vinum Ferri
,, Ipecacuanhæ
,, Opii
Vinum Rhei

ZINCI ACETAS.

Acetate of Zinc.

$Zn(C_2H_3O_2)_2 2H_2O$.

Take of

Carbonate of Zinc . . .	2 ounces
Acetic Acid	5 fluid ounces, or a sufficiency
Distilled Water . . .	6 fluid ounces

Add the carbonate of zinc in successive portions to three ounces of the acetic acid previously mixed with the water in a flask; heat gently, add by degrees the remainder of the acid till the carbonate is dissolved; boil for a few minutes, filter while hot, and set it aside for two days to crystallise. Decant the mother liquor; evaporate to one half, and again set it aside for two days to crystallise. Place the crystals in a funnel to drain, then spread them on filtering paper on a porous tile, and dry them by exposure to the air at ordinary temperatures. $ZnCO_3 2Zn(OH)_2 + 6 HC_2H_3O_2 = 3 Zn(C_2H_3O_2)_2 + 5H_2O + CO_2$.

Characters and Tests.—Thin translucent and colourless crystalline plates, of a pearly lustre, with a sharp unpleasant taste; evolving acetic acid when decomposed by sulphuric acid; soluble in water, and the solution precipitated pure white by sulphuretted hydrogen. A dilute watery solution is not affected by chloride of barium or nitrate of silver, and, when slightly acidulated with hydrochloric acid, is not precipitated by sulphuretted hydrogen; after it has been boiled for a few minutes with a little nitric acid, it yields with ammonia a white precipitate entirely soluble without colour in an excess of the reagent. Absence of Fe + Cu.

Absence of As Cd Cu + Pb.

Dose.—1 to 2 grains, as a tonic; 10 to 20 grains, as an emetic.

ZINCI CARBONAS.

Carbonate of Zinc.

$ZnCO_3(Zn2HO)_2,H_2O$.

Take of

Sulphate of Zinc	10 ounces
Carbonate of Sodium	10½ ounces
Boiling Distilled Water . . .	a sufficiency

Dissolve the carbonate of sodium in a pint of the water in a capacious porcelain vessel, and pour into it a solution of the sulphate of zinc in a pint of the water, stirring diligently. Boil for fifteen minutes after effervescence has ceased; and let the precipitate subside. Decant the supernatant liquor, pour on the precipitate three pints of boiling distilled water, agitating briskly; let the precipitate again subside, and repeat the processes of affusion of hot distilled water and subsidence, till the washings are no longer precipitated by chloride of barium. Collect the precipitate on calico, let it drain, and dry it at a moderate temperature.

$3\ ZnSO_4 + 3\ Na_2CO_3 + 3\ H_2O = ZnCO_3\ 2\ Zn(OH)_2 \cdot H_2O + 3\ Na_2SO_4 + 2\ CO_2$.

Characters and Tests.—White, tasteless, inodorous, insoluble in water; soluble, with effervescence and without residue, in diluted nitric acid. This solution is not affected by chloride of barium or nitrate of silver, and gives with carbonate of ammonium a white precipitate entirely soluble without colour in an excess of the reagent, forming a solution which is precipitated white by sulphydrate of ammonium.

Absence of Cu

Preparations for which Carbonate of Zinc is used.

Zinci Acetas
" Chloridum
Zinci Oxidum
" Sulphas

ZINCI CHLORIDUM.

Chloride of Zinc.

$ZnCl_2$.

Take of

Granulated Zinc	1 pound
Hydrochloric Acid	44 fluid ounces
Solution of Chlorine . . .	a sufficiency
Carbonate of Zinc	½ ounce, or a sufficiency
Distilled Water	1 pint

Put the zinc into a porcelain basin, add by degrees the hydrochloric acid previously mixed with the water, and aid the action by gently warming on a sand-bath until gas is no longer evolved. Boil for half an hour, supplying the water lost by evaporation, and allow it to stand on a cool part of a sand-bath for twenty-four hours, stirring frequently.

Test a few drops of the resulting liquid for iron or lead by adding excess of ammonia and then sulphydrate of ammonium, when a black precipitate will be produced if iron or lead be present.

In the latter case, filter the remainder of the product into a gallon bottle, and pour in the solution of chlorine by degrees, with frequent agitation, until the fluid acquires a permanent odour of chlorine. Add the carbonate of zinc, in small quantities at a time, and with renewed agitation, until a brown sediment appears, and the whole of the iron or lead is thus precipitated. Filter through paper into a porcelain basin, and evaporate until a portion of the liquid, withdrawn on the end of a glass rod and cooled, forms an opaque white solid. Pour it out now into proper moulds, and when the salt has solidified, but before it has cooled, place it in closely stoppered bottles.

Contains a certain amt of Zn_2OCl_2

$2ZnCl_2 + H_2O = Zn_2OCl_2 + 2HCl$

If no iron or lead be present, filter and evaporate, etc., at once.

Characters and Tests.—Colourless opaque rods or tablets, very deliquescent and caustic; soluble almost entirely in water, alcohol, or ether. The aqueous solution is precipi-

$2FeCl_2 + Cl_2 = Fe_2Cl_6$

$Fe_2Cl_6 + 3ZnCO_3 + 3H_2O = 3ZnCl_2 + Fe_2(OH)_6 + 3CO_2$.

$PbCl_2 + Cl_2 + 2ZnCO_3 = 2ZnCl_2 + PbO_2 + 2CO_2$.

tated white by sulphydrate of ammonium and by nitrate of silver; but, if first acidulated with hydrochloric acid, it is not affected by sulphuretted hydrogen. The solution is not affected by chloride of barium or oxalate of ammonium, and is not tinged blue by ferrocyanide or ferricyanide of potassium. Ammonia throws down a white precipitate entirely soluble in an excess of the reagent.

Preparation containing Chloride of Zinc.

Liquor Zinci Chloridi .	366 grains in 1 fluid ounce

ZINCI OXIDUM.

Oxide of Zinc.

ZnO.

It may be made as follows:—

Take of

Carbonate of Zinc	6 ounces

Place the carbonate of zinc in a loosely covered Hessian crucible, and expose it to a dull red heat, until a portion, taken from the centre of the contents of the crucible and cooled, no longer effervesces when moistened with water and dropped into diluted sulphuric acid. Let the crucible cool, and transfer the product to stoppered bottles.

Characters and Tests.—A soft nearly white tasteless and inodorous powder, becoming pale yellow when heated. Dissolves without effervescence in diluted nitric acid, forming a solution which is not affected by chloride of barium, nitrate of silver, or diluted sulphuric acid, and gives with carbonate of ammonium a white precipitate which dissolves entirely without colour in an excess of the reagent, forming a solution which is precipitated white by sulphydrate of ammonium.

Absence of Cu

Oxide of zinc may also be obtained from metallic zinc by combustion. Thus prepared it is white.

Dose.—2 to 10 grains.

Preparation.—Unguentum Zinci, 1 part in 6½, nearly.

$ZnCO_3 \cdot 2Zn(OH)_2 = 3ZnO + CO_2 + H_2O$.

ZINCI SULPHAS.

Sulphate of Zinc.

$ZnSO_4,7H_2O$.

Take of

Granulated Zinc	16 ounces
Sulphuric Acid	12 fluid ounces
Distilled Water	4 pints
Solution of Chlorine	a sufficiency
Carbonate of Zinc	½ ounce, or a sufficiency

Pour the sulphuric acid previously mixed with the water on the zinc contained in a porcelain basin, and, when effervescence has nearly ceased, aid the action by heat.

Test a few drops of the resulting liquid for iron by adding excess of ammonia and then sulphydrate of ammonium, when a black precipitate will be produced if iron be present.

In the latter case filter the remainder of the fluid into a gallon bottle, and add gradually with constant agitation the solution of chlorine until the fluid acquires a permanent odour of chlorine. Add now with continued agitation the carbonate of zinc until a brown precipitate appears and the whole of the iron is thus precipitated. Let the precipitate subside, filter the solution; evaporate till a pellicle forms on the surface, and set aside to crystallise. Dry the crystals by exposure to the air on filtering paper placed on porous tiles. More crystals may be obtained by again evaporating the mother liquor.

If no iron be present, filter, and evaporate, etc., at once.

Characters and Tests.—In colourless transparent prismatic crystals with a strong metallic styptic taste. Its solution in water gives white precipitates with chloride of barium or sulphydrate of ammonium. Its aqueous solution is not tinged purple by tincture of galls; and when acidulated with sulphuric or hydrochloric acid gives no precipitate with sulphuretted hydrogen. After it has been boiled for a few minutes with a little nitric acid, it yields with ammonia a

Absence of Fe.

$$Zn_2 + 2H_2SO_4 + xH_2O = 2ZnSO_4 + 2H_2 + xH_2O.$$

$$6FeSO_4 + 3Cl_2 = 2Fe_2(SO_4)_3 + Fe_2Cl_6$$

$$Fe_2Cl_6 + 2Fe_2(SO_4)_3 + 9ZnCO_3 + 9H_2O = \underbrace{6ZnSO_4}_{\text{crystallizes}} + \underbrace{3ZnCl_2}_{\text{left in solution}} + 3Fe_2(OH)_6 + 9CO_2$$

Zinci Sulphocarbolas is best prepared by heating a mixtur phenol + H_2SO_4 adding $BaCO_3$ in excess. Filtering off from any $BaSO_4$ + addi to the filtrate $ZnCO_3$. $BaCO_3$ is deposited + sulphocarbolate of Zn le in solution + is obtained by evaporating + crystallizing.

white precipitate which is entirely soluble without colour in an excess of the reagent. Absence of Fe (sulphate)

For Collyrium 1 or 2 grs to each ounce of water.

Dose.—1 to 3 grains (as a tonic); 10 to 30 grains (as an emetic).

Preparations for which Sulphate of Zinc is used.

Zinci Carbonas | Zinci Valerianas

ZINCI SULPHOCARBOLAS.

Sulphocarbolate of Zinc.

$Zn(C_6H_5SO_4)_2,H_2O$.

May be obtained by heating a mixture of carbolic acid and sulphuric acid, saturating the product with oxide of zinc, evaporating and crystallising.

Characters and Tests.—Colourless, transparent, tabular, efflorescent crystals; soluble in about twice their weight of rectified spirit or of water. The aqueous solution is coloured violet by perchloride of iron, and affords a white precipitate with sulphydrate of ammonium; it is not at once rendered turbid, or is only rendered faintly turbid, by chloride of barium, and is not precipitated by oxalate of ammonium Absence of Ca.

$$C_6H_5\text{-}OH + H_2SO_4 = C_6H_4(HSO_3)OH + H_2O$$

$$ZnO + 2C_6H_4(HSO_3)OH = Zn(C_6H_5\text{-}SO_4)_2 \cdot H_2O.$$

ZINCI VALERIANAS.

Valerianate of Zinc.

A mixture of Glyc Tragacanth with addition of a little inert vegetable powder makes a good excipient

$Zn(C_5H_9O_2)_2$.

It may be made as follows:—

Take of

Sulphate of Zinc	$5\frac{1}{2}$ ounces
Valerianate of Sodium	5 ounces
Distilled Water	a sufficiency

Dissolve the sulphate of zinc and the valerianate of sodium, each in two pints of the water; heat both solutions to near

$$ZnSO_4 + 2NaC_5H_9O_2 = Zn(C_5H_9O_2)_2 + Na_2SO_4.$$

the boiling point; mix them, cool and skim off the crystals which are produced. Evaporate the mother liquor at a temperature not exceeding 200° F. (93°·3 C.), till it is reduced to four ounces; cool again, remove the crystals which have formed, and add them to those which already have been obtained. Drain the crystals on a paper filter, and wash them with a small quantity of cold distilled water, till the washings give but a very feeble precipitate with chloride of barium. Again drain, and dry on filtering paper at ordinary temperatures.

Valerianate of zinc may also be prepared by saturating valerianic acid with carbonate of zinc.

Characters and Tests.—In brilliant white pearly tabular crystals, with a feeble odour of valerianic acid, and a metallic taste; scarcely soluble in cold water or in ether, soluble in hot water and alcohol. Heated to redness in an open crucible, it leaves a residue which, when dissolved in diluted sulphuric acid, yields with ammonia a precipitate which entirely dissolves in an excess of the reagent, and the resulting solution gives a white precipitate with sulphydrate of ammonium. Its solution in hot water is only faintly precipitated by chloride of barium. It gives, when heated with diluted sulphuric acid, a distillate, which, when mixed with solution of acetate of copper, does not immediately affect the transparency of the fluid, but forms after a little time oily drops, which gradually pass into a bluish-white crystalline deposit.

Abs of $ZnSO_4$.

Absence of Butyrate (Zn)

Dose.—1 to 3 grains.

ZINCUM.

Zinc. Zn 65

Zinc of commerce.

Sources of Zn
Calamine $ZnCO_3$
Blende ZnS.
Red Oxide ZnO
Siliceous or Electric Calamine $Zn_2SiO_4 \cdot H_2O$

Preparations containing Zinc.

Calamina Præparata
Liquor Zinci Chloridi
Oleatum Zinci
Unguentum Calaminæ
,, Zinci
,, ,, Oleati
Zinci Acetas
Zinci Carbonas
,, Chloridum
,, Oxidum
,, Sulphas
,, Sulphocarbolas
,, Valerianas
Zincum Granulatum

The ores are dressed, picked, roasted. Blende is roasted at a strong heat in a reverbatory furnace; SO_2 escapes + the oxide of Zn is left. Calamine is calcined in a furnace somewhat resembling a lime kiln. The roasted oxide is then mixed with ground coal + heated in clay retorts The reduced metal distils over + is collected in receivers.

ZINCUM GRANULATUM.

Granulated Zinc.

Take of

Zinc of commerce	1 pound

Heat it in an earthen crucible, and immediately the metal is fused remove the crucible from the fire and pour the fluid in a thin stream into a vessel containing about two gallons of cold water. Drain off the water and dry the granulated zinc.

Preparations.

Liquor Zinci Chloridi | Zinci Chloridum
Zinci Sulphas

ZINGIBER.

N.O. Zingiberaceæ.

Ginger.

The scraped and dried rhizome of Zingiber officinale, *Roscoe*; *Bentl. and Trim. Med. Pl.* vol. iv. plate 270.

Indiginous to Tropical Asia Cultd. largely in S. America + Australia W. Indies + Tropical Africa. Largely imported from Jamaica Cochin China India Egypt + W. Coast of Africa

Characters.—In flattish irregularly branched pieces; varying in length, but commonly from about three to four inches, each branch marked at its summit by a depressed scar; externally pale buff and somewhat striated and fibrous; breaking readily with a mealy, short, but rather fibrous fracture. Odour agreeable, aromatic; taste strong, pungent. P.C. several resins An essential oil nearly 2%. Gingerol starch + mucilage.

Preparations.

Confectio Opii	1 part in 12, nearly
,, Scammonii . .	1 part in 6, nearly
Infusum Sennæ . . .	56 grains to 1 pint
Pilula Scillæ Composita . .	1 part in 6¼, nearly
Pulvis Cinnamomi Compositus .	1 part in 8
,, Jalapæ Compositus .	1 part in 15
,, Opii Compositus . .	1 part in 3
,, Rhei Compositus . .	1 part in 9
,, Scammonii Compositus .	1 part in 8
Syrupus Zingiberis	
Tinctura Zingiberis . . .	2½ ounces to 1 pint
,, ,, Fortior .	10 ounces to 1 pint
Vinum Aloes	40 grains to 1 pint

198

Poison Schedule.

Part I Not to be sold unless the purchaser is known to or is introduced by some person known to seller.

Also Entry to be made in Poison Book (1) Date of sale (2) Name + address of purchaser (3) Name + quantity of article (4) Purpose for which it is wanted, attested by signature. and must be labelled (1) with name of article (2) the word "poison" + (3) name + address of seller

Arsenic + its preparations Vide Arsenic act.

Aconite + its preparations

Alkaloids All poisonous vegetable alkaloids + their salts.

Atropine + its preparations

Cantharides

Corrosive Sublimate.

Cyanide of Potassium + all metallic cyanides + their preparations

Emetic Tartar.

Ergot of Rye + its preparations

Prussic acid + its preparations

Savin + its oil

Strychnine + its preparations

Arsenic must be coloured. Only sold to a person of mature age, whose occupation must be entered in the P. book + the witness must be present at time of sale + enter his name + address in P. book.

APPENDIX.

Vermin Killers. if preparations of poisons the preparations of which are in part I of this schedule.

Part 2. Must be labelled with (1) Name of article (2) The word "poison" (3) Name + address of seller.

Almonds, Ess. oil of. (unless deprived of prussic acid)

Belladonna + its preparations

Cantharides, Tincture, + all vesicating liquid preparations of.

Chloroform

Chloral Hydrate + its preparations

Corrosive Sublimate

Morphia preparations of

Nux Vomica + its preparations.

Opium + its preparations + preparations of poppies.

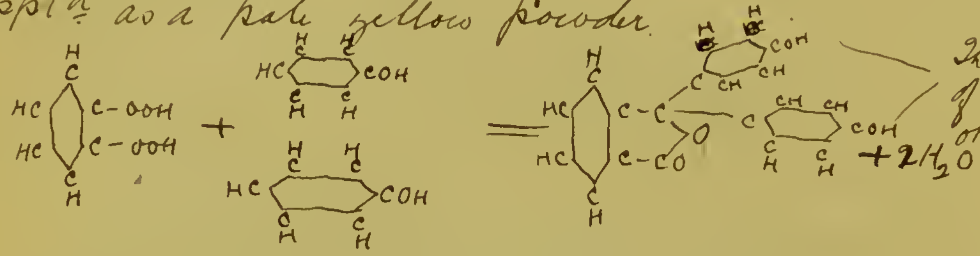
Oxalic Acid.

Precipitate Red + White.

Vermin Killers Compounds containing poisons prepared ~~from~~ for the destruction of vermin if not subject to the provisions of Part I but are in Part II.

Phenol Phthalein: Phthalic acid is mixed with with phenol then a little H_2SO_4 added & the mixtu heated on a water bath. NaHO is then added & the mixture diluted with water; filtered to separate tarry matter, & on the addition of HCl Phenol phthalein is ppt'd as a pale yellow powder.

*



The replacement of these H by Na o other alkali is t cause of the red colour produce

* Phthalic acid is the first product in the conversion of napthaline into benzoic acid.

APPENDIX.

I.

ARTICLES EMPLOYED IN CHEMICAL TESTING.

ACETATE OF SODIUM.

$NaC_2H_3O_2,3H_2O$.

(Also employed, dried, in the preparation of Acetic Ether.)

BENZOL.

A colourless volatile liquid, obtained from coal tar, and consisting chiefly of benzol, C_6H_6. Specific gravity about 0·850.

BENZOLATED AMYLIC ALCOHOL.

Mix together three volumes of benzol and one of amylic alcohol. Decant the supernatant fluid from any deposited water.

CHLORIDE OF BARIUM.

$BaCl_2,2H_2O$.

COPPER FOIL.

Pure metallic Copper, thin and bright.

Used to prove absence of As in HCl; Antim Nig Pur; Ferrous Phosphate Liq Ferri Perchlor Fort.

FERRICYANIDE OF POTASSIUM.

Synonym.—Red Prussiate of Potash.

$K_6Fe_2C_{12}N_{12}$.

Test.—Its aqueous solution gives no precipitate with a dilute solution of a pure ferric salt.

GOLD, FINE.

Gold, free from metallic impurities.

HYPOSULPHITE OF SODIUM.

Synonym.—Thiosulphate of Sodium.

$Na_2S_2O_3,5H_2O$.

Test.—24·8 grains decolorise 1000 grain-measures of the volumetric solution of iodine. 1 CC. $\frac{N}{10}$ Iodine = ·0248 grm $Na_2S_2O_3 \cdot 5H_2O$.

INDIGO.

C_8H_5NO.

A blue pigment prepared from various species of Indigofera, *Linn.*

ISINGLASS.

The swimming bladder or sound of various species of Acipenser, *Linn.*, prepared, and cut into fine shreds.

LITMUS.

R: tinctorla
R: fuciformis etc
N.O. Lichenes.

A blue pigment prepared from various species of Roccella, *DC.*

LITMUS PAPER, BLUE.

Unsized white paper steeped in solution of litmus, and dried by exposure to the air.

LITMUS PAPER, RED.

Unsized white paper steeped in solution of litmus which has been previously reddened by the addition of a very minute quantity of acid, and dried by exposure to the air.

MOLYBDATE OF AMMONIUM.

OXALIC ACID OF COMMERCE.

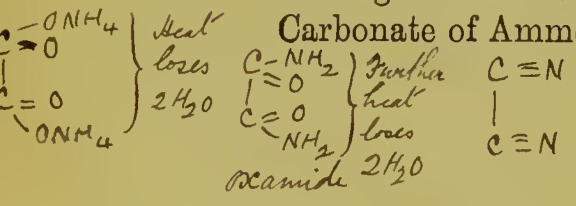
Oxalic acid ($H_2C_2O_4,2H_2O$), not quite pure.

OXALATE OF AMMONIUM.

$(NH_4)_2C_2O_4,H_2O$.

Take of

Oxalic Acid	1 ounce
Boiling Distilled Water . . .	8 fluid ounces
Carbonate of Ammonium . .	a sufficiency



C_2N_2 passed into water

$C_2N_2 + 2H_2O = \left.\begin{matrix}CONH_2\\CONH_2\end{matrix}\right\}$

$\begin{matrix}CONH_2\\CONH_2\end{matrix} + 2H_2O = \left.\begin{matrix}COONH_4\\COONH_4\end{matrix}\right\}$

Dissolve the oxalic acid in the water, neutralise the solution with the carbonate of ammonium at, finally, a boiling temperature; filter it while still hot, and set it by that crystals may form as it cools.

PETROLEUM SPIRIT.

Synonyms.—Benzoline; Petroleum Ether.

A colourless very volatile and highly inflammable liquid obtained from petroleum, and consisting of a mixture of the lower members of the paraffin or marsh-gas series of hydrocarbons. Boiling point 122° to 140° F. (50° to 60° C.). Specific gravity about 0·670 to 0·700.

PHENOL-PHTHALEIN.

Produced by reaction of phenol and phthalic anhydride. Its tincture yields an intense red colour with potash or soda, hence may be used as an indicator of the termination of volumetric reactions, especially those with organic acids.

PLATINUM BLACK.

Platinum in a state of minute division, obtained by adding excess of carbonate of sodium and some sugar to solution of perchloride of platinum, and boiling until a black precipitate is formed, which is washed and dried.

PLATINUM FOIL.

SUBACETATE OF COPPER OF COMMERCE.

Verdigris.

SULPHATE OF COPPER, ANHYDROUS.

$CuSO_4$.

Sulphate of copper deprived of its water by a temperature of 400° F. (204°·4 C.)

Characters.—A yellowish-white powder, which becomes blue when moistened with water.

SULPHIDE OF IRON.

FeS.

Prepared by combining its elements in proper proportions by the aid of heat. Small quantities may be produced by applying the end of a rod of iron, heated to whiteness at a blacksmith's forge, to the end of a roll of sulphur, and allowing the sulphide of iron as it is formed to run into a vessel of water.

A purer preparation is obtained by heating $Sb_2S_3 + 6HCl = 3H_2S + 2SbCl_3$

SULPHURETTED HYDROGEN.

H_2S.

Take of

Sulphide of Iron	½ ounce
Water	4 fluid ounces
Sulphuric Acid	a sufficiency

Place the sulphide of iron and the water in a gas-bottle closed with a cork perforated by two holes, through one of which passes air-tight a funnel tube of sufficient length to dip into the water, and through the other a tube for giving exit to the gas. Through the former pour from time to time a little of the acid, so as to develope the sulphuretted hydrogen as it may be required.

When the gas is employed, either in chemical testing or in the preparation of Acidum Hydrobromicum Dilutum, it should be washed by passing it through a similarly fitted bottle containing water. $FeS + H_2SO_4 = FeSO_4 + H_2S$.

TIN, GRANULATED.

Grain tin, reduced to small fragments by fusing and, immediately the tin is melted, pouring it in a thin stream into cold water.

Indig to S ~~Africa~~ Asia
Largely cultivated in
British India
+ East Indies.

TURMERIC.

P.C. Essential oil
Curcumin, a
viscid oil, resin gum
starch.

The dried rhizome of Curcuma longa, *Linn.*

TURMERIC PAPER.

Unsized white paper steeped in tincture of turmeric and dried by exposure to the air.

TURMERIC TINCTURE.

Take of

Turmeric, bruised	1 ounce
Rectified Spirit	6 fluid ounces

Macerate for seven days in a closed vessel, and filter.

II.

TEST SOLUTIONS.

SOLUTION OF ACETATE OF COPPER.

Take of

Subacetate of Copper of commerce, in fine powder	½ ounce
Acetic Acid	1 fluid ounce
Distilled Water	a sufficiency

Dilute the acid with half a fluid ounce of the water; digest the subacetate of copper in the mixture at a temperature not exceeding 212° F. (100° C.) with repeated stirring, and continue the heat until a dry residue is obtained. Digest this in four ounces of boiling distilled water, and by the addition of more of the water make up the solution to five fluid ounces. Filter it.

SOLUTION OF ACETATE OF POTASSIUM.

Take of

Acetate of Potassium	½ ounce
Distilled Water	5 fluid ounces

Dissolve and filter.

SOLUTION OF ACETATE OF SODIUM.

Take of

Acetate of Sodium	½ ounce
Distilled Water	5 fluid ounces

Dissolve and filter.

SOLUTION OF ALBUMEN.

Take of

The White of one Egg	
Distilled Water	4 fluid ounces

Mix by trituration in a mortar, and filter through clean tow first moistened with distilled water.

This solution must be recently prepared.

SOLUTION OF AMMONIO-NITRATE OF SILVER.

Take of

Nitrate of Silver, in crystals .	¼ ounce
Solution of Ammonia . . .	½ fluid ounce, or a sufficiency
Distilled Water	a sufficiency

Dissolve the nitrate of silver in eight fluid ounces of the water, and to the solution cautiously add the ammonia until the precipitate first formed is nearly dissolved. Clear the solution by filtration, and then add distilled water, so that the bulk may be ten fluid ounces.

SOLUTION OF AMMONIO-SULPHATE OF COPPER.

Take of

Sulphate of Copper, in crystals .	½ ounce
Solution of Ammonia . . .	a sufficiency
Distilled Water	a sufficiency

Dissolve the sulphate of copper in eight fluid ounces of the water, and to the solution cautiously add the ammonia until the precipitate first formed is nearly dissolved. Clear the solution by filtration, and then add distilled water, so that the bulk may be ten fluid ounces.

SOLUTION OF AMMONIO-SULPHATE OF MAGNESIUM.

Take of

Sulphate of Magnesium . . .	1 ounce
Chloride of Ammonium . . .	½ ounce
Solution of Ammonia . . .	½ fluid ounce
Distilled Water	a sufficiency

Dissolve the sulphate of magnesium and chloride of ammonium in eight fluid ounces of the water, and to the solution add the ammonia, and as much distilled water as will make up the bulk to ten fluid ounces. Filter it.

SOLUTION OF BORIC ACID.

Take of

Boric Acid	50 grains
Rectified Spirit	1 fluid ounce

Dissolve and filter.

SOLUTION OF BROMINE.

Take of

Bromine	10 minims
Distilled Water	5 fluid ounces

Place the bromine in a bottle furnished with a well-fitting stopper, pour on the water, and shake several times. Keep it excluded from the light.

SOLUTION OF CARBONATE OF AMMONIUM.

Take of

Carbonate of Ammonium, in small pieces	½ ounce
Solution of Ammonia . . .	¾ fluid ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF CHLORIDE OF AMMONIUM.

Take of

Chloride of Ammonium . . .	1 ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF CHLORIDE OF BARIUM.

Take of

Chloride of Barium, in crystals	1 ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF FERRICYANIDE OF POTASSIUM.

Take of

Ferricyanide of Potassium, in crystals	¼ ounce
Distilled Water	5 fluid ounces

Dissolve and filter.

SOLUTION OF FERROCYANIDE OF POTASSIUM.

Take of

Ferrocyanide of Potassium, in crystals	¼ ounce
Distilled Water	5 fluid ounces

Dissolve and filter.

SOLUTION OF IODIDE OF POTASSIUM.

Take of

Iodide of Potassium	1 ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF ISINGLASS.

Take of

Isinglass, in shreds	50 grains
Warm Distilled Water	5 fluid ounces

Mix, and digest for half an hour on a water-bath with repeated shaking, and filter through clean tow moistened with distilled water.

Gives a ppt. with
with tannic acid.
Hence used to test
for this substance
as impurity in
gallic acid.

SOLUTION OF LITMUS.

Take of

Litmus, in powder	1 ounce
Rectified Spirit	10 fluid ounces
Distilled Water	10 fluid ounces

Boil the litmus with four fluid ounces of the spirit for one hour, and pour away the clear fluid; repeat this operation with three ounces of the spirit; and a third time with the remainder of the spirit. Digest the residual litmus in the distilled water, and filter.

SOLUTION OF OXALATE OF AMMONIUM.

Take of

Oxalate of Ammonium	½ ounce
Warm Distilled Water	1 pint

Dissolve and filter.

SOLUTION OF PERCHLORIDE OF GOLD.

Take of

Fine Gold, reduced by a rolling machine to a thin lamina	60 grains
Nitric Acid	1½ fluid drachm
Hydrochloric Acid	7 fluid drachms
Distilled Water	a sufficiency

Place the gold in a flask with the nitric acid and six fluid drachms of the hydrochloric acid, first mixed with four fluid drachms of the water, and digest until it is dissolved. Add to the solution the additional fluid drachm of hydrochloric acid, evaporate at a temperature not exceeding 212° F. (100°C.) until acid vapours cease to be given off, and dissolve the chloride of gold thus obtained in five fluid ounces of distilled water. The solution should be kept in a stoppered bottle.

SOLUTION OF PERCHLORIDE OF PLATINUM.

Take of

Thin Platinum Foil	¼ ounce
Nitric Acid	a sufficiency
Hydrochloric Acid	a sufficiency
Distilled Water	7 fluid ounces

Mix a fluid ounce of the nitric acid with four fluid ounces of the hydrochloric acid and two fluid ounces of the water; pour the mixture into a small flask containing the platinum, and digest with a little heat, adding more of the acids mixed in the same proportion, should this be necessary, until the metal is dissolved. Transfer the solution to a porcelain dish, add to it a fluid drachm of hydrochloric acid, and evaporate on a water-bath, until acid vapours cease to be given off. Let the residue be dissolved in the remaining five ounces of distilled water. Filter, and preserve it in a stoppered bottle.

SOLUTION OF PHOSPHATE OF SODIUM.

Take of

Phosphate of Sodium, in crystals	1 ounce
Distilled Water	10 fluid ounces

Dissolve and filter.

SOLUTION OF POTASSIO-MERCURIC IODIDE.

Synonym.—Nessler's Reagent.

Take of

Iodide of Potassium	270 grains
Perchloride of Mercury	a sufficiency
Caustic Soda	2 ounces
Distilled Water	1 pint

Dissolve the iodide of potassium and 100 grains of the perchloride of mercury in fifteen fluid ounces of boiling distilled water. To this fluid add more aqueous solution of the perchloride of mercury until the precipitate produced no longer continues to disappear on well stirring, and a slight permanent precipitate remains. Then add the caustic soda. When the latter has dissolved, add a little more of the aqueous solution of perchloride of mercury, shake, allow to settle, and dilute the whole with distilled water to the volume of one pint. The solution should be kept in a stoppered bottle.

SOLUTION OF STANNOUS CHLORIDE.

Take of

Granulated Tin	1 ounce
Hydrochloric Acid	3 fluid ounces
Distilled Water	a sufficiency

Dilute the acid in a flask with one fluid ounce of the water, and, having added the tin, apply heat gently until gas ceases to be evolved. Add as much of the water as will make up the bulk to five fluid ounces, and transfer the solution, together with the undissolved tin, to a bottle with an accurately ground stopper.

SOLUTION OF SULPHATE OF INDIGO.

Take of

Indigo, dry and in fine powder .	5 grains
Sulphuric Acid	10 fluid ounces

Used tō proove absence of HNO_3 in Ac: Hydrochlor:
Nitrates in Bism Carb.

Mix the indigo with a fluid drachm of the sulphuric acid in a small test-tube, and heat on a water-bath for an hour. Pour the blue liquid into the remainder of the acid, agitate the mixture, and, when the undissolved indigo has subsided, decant the clear liquid into a stoppered bottle.

SOLUTION OF SULPHATE OF IRON.

Take of

Granulated Sulphate of Iron . .	10 grains
Boiling Distilled Water . . .	1 fluid ounce

Dissolve and filter.

This solution should be recently prepared.

SOLUTION OF SULPHATE OF CALCIUM.

Take of

Sulphate of Calcium	¼ ounce
Distilled Water	1 pint

Rub the sulphate of calcium in a porcelain mortar for a few minutes with two ounces of the water, introduce the mixture thus obtained into a pint bottle containing the rest of the water, shake well several times, and allow the undissolved sulphate to subside. Filter.

SOLUTION OF SULPHYDRATE OF AMMONIUM.

Take of

Solution of Ammonia	5 fluid ounces

Put three fluid ounces of the ammonia into a bottle, and conduct into this a stream of sulphuretted hydrogen as long as the gas continues to be absorbed; then add the remainder of the ammonia, and transfer the solution to a green-glass bottle furnished with a well-ground stopper.

SOLUTION OF TARTARIC ACID.

Take of

Tartaric Acid, in crystals	1 ounce
Distilled Water	8 fluid ounces
Rectified Spirit	2 fluid ounces

Dissolve the tartaric acid in the water, add the rectified spirit, and preserve the solution in a stoppered bottle.

SOLUTION OF YELLOW CHROMATE OF POTASSIUM.

Take of

Red Chromate of Potassium	295 grains
Bicarbonate of Potassium	200 grains
Distilled Water	10 fluid ounces

Dissolve the red chromate in the water, and exactly neutralise the solution with the bicarbonate, evolution of all carbonic acid being ensured by ebullition. Filter.

TINCTURE OF PHENOL-PHTHALEIN.

Take of

Phenol-phthalein	1 grain
Proof Spirit	500 grains

Dissolve. The solution should be colourless.

III.

TEST SOLUTIONS FOR VOLUMETRIC ESTIMATIONS.

The processes for volumetric estimations may be performed either with British or with metric weights and measures, and the solutions are so arranged that they will be of the same strength, and the same indications will be obtained in using them, whichever system is employed, without the *necessity* of altering any of the figures by which the quantities of the substances tested or of the test solutions required in the process are expressed.

According to the British system, the quantities of the substances to be tested are expressed in grains by weight, whilst the quantities of the test solutions employed in testing are expressed in grain-measures,—the grain-measure being the volume of a grain of distilled water.

According to the metric system, the quantities of the substances to be tested are expressed in grammes by weight, whilst the quantities of the test solutions employed in testing are expressed in cubic centimetres (C.C.),—the cubic centimetre being the volume of a gramme of distilled water.

As the cubic centimetre bears the same relation to the gramme that the grain-measure bears to the grain, the one system may be substituted for the other with no difference in the results, excepting that, by the metric system, all the quantities will be expressed in relation to a weight (the gramme) which is rather more than fifteen (15·432) times as great as the British grain.

In practice it will be found convenient, in substituting metric for British weights and measures, to reduce the values of all the numbers to one tenth, by moving the decimal points, and this has been done in the tables appended to the descriptions of the volumetric solutions; for the quantities indicated in the Pharmacopœia, which in grains and grain-measures can be conveniently used, would be found inconveniently large if the same numbers of grammes and cubic centimetres were employed.

The following apparatus is required in the preparation and use of these solutions.

For British weights and measures:—

1. A flask which, when filled to a mark on the neck, contains exactly 10,000 grains of distilled water at 60° F. (15°·5 C.) The capacity of the flask is therefore 10,000 grain-measures.

2. A graduated cylindrical jar which, when filled to 0, holds 10,000 grains of distilled water, and is divided into 100 equal parts.

3. A burette. A graduated glass tube which, when filled to 0, holds 1,000 grains of distilled water, and is divided into 100 equal parts. Each part therefore corresponds to 10 grain-measures.

For metric weights and measures:—

1. A glass flask which, when filled to a mark on the neck, contains one litre or 1,000 cubic centimetres.

2. A graduated cylindrical jar which, when filled to 0, contains one litre (1,000 cubic centimetres), and is divided into 100 equal parts.

3. A burette. A graduated tube which, when filled to 0, holds 100 cubic centimetres, and is divided into 100 equal parts.

(One cubic centimetre is the volume of one gramme of distilled water at 4° C.[1] (39°·2 F.) 1,000 cubic centimetres equal one litre.)

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[1] It is customary to make the measurements with metric apparatus at 60° F. (15°·5 C.)

Volumetric solutions, before being used, should be shaken, in order that they may be throughout of uniform strength. They should also be preserved in stoppered bottles. All measurements should be made at 60° F. (15°·5 C.).

VOLUMETRIC SOLUTION OF BICHROMATE OF POTASSIUM.

(Bichromate of Potassium, $K_2Cr_2O_7 = 295$.)

Take of

Bichromate of Potassium . . .	147·5 grains
Distilled Water	a sufficiency

Put the bichromate of potassium into the 10,000 grain flask, and, having half filled the flask with water, allow the salt to dissolve; then dilute the solution with more water, until it has the exact bulk of 10,000 grain-measures. 1,000 grain-measures of this solution contain 14·75 grains of the bichromate ($\frac{1}{20}$th of $K_2Cr_2O_7$, in grains), and, when added to a solution of a ferrous salt acidulated with hydrochloric acid, are capable of converting 16·8 grains of iron ($\frac{1}{20}$th of 6Fe, in grains) from the ferrous to the ferric state.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. Thus 14·75 grammes of bichromate of potassium should be made to form 1,000 cubic centimetres of solution. 100 cubic centimetres of this solution contain 1·475 grammes of the bichromate ($\frac{1}{200}$th of $K_2Cr_2O_7$, in grammes), and, when added to a solution of a ferrous salt acidulated with hydrochloric acid, are capable of converting 1·68 gramme of iron ($\frac{1}{200}$th of 6Fe, in grammes) from the ferrous to the ferric state.

This solution is used for determining the proportion of ferrous salt in the following preparations. It is known that the whole of the ferrous salt has been converted into a ferric salt when a minute drop of the liquid, placed in contact with a drop of a very dilute solution of ferricyanide of potassium on a white plate, ceases to strike with it a blue colour.

	British weights and measures.				Metric weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Ferri Arsenias .	100·0	=	225	or	10·0	=	22·5
,, Carb. Sacch. .	30·0	=	287·5	or	3·0	=	28·75
,, Phosphas .	30·0	=	279	or	3·0	=	27·9
,, Sulphas .	42·1	=	500	or	4·21	=	50·0
,, ,, Exsiccata	10·0	=	191	or	1·0	=	19·1
,, ,, Granulata	41·7	=	500	or	4·17	=	50·0

VOLUMETRIC SOLUTION OF HYPOSULPHITE OF SODIUM.

(Hyposulphite of Sodium crystallised, $Na_2S_2O_3,5H_2O = 248$.)

Take of
Hyposulphite of Sodium, in crystals . 280 grains
Distilled Water . . . . . a sufficiency

Dissolve the hyposulphite of sodium in 10,000 grain-measures of water. Fill a burette with this solution, and drop it cautiously into 1,000 grain-measures of the volumetric solution of iodine, until the brown colour is just discharged. Note the number of grain-measures (n) required to produce this effect; then put 8,000 grain-measures of the same solution into a graduated jar, and augment this quantity by the addition of distilled water until it amounts to $\frac{8000\times1000}{n}$ grain-measures. If, for example, $n=950$, the 8,000 grain-measures of solution should be diluted to the bulk of $\frac{8000\times1000}{950}=8,421$ grain-measures. 1,000 grain-measures of this solution contain 24·8 grains of the hyposulphite ($\frac{1}{10}$th of $Na_2S_2O_3,5H_2O$, in grains), and therefore correspond to 12·7 grains of iodine ($\frac{1}{10}$th of an atomic weight in grains).

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres of this solution contain 2·48 grammes of the hyposulphite ($\frac{1}{100}$th of $Na_2S_2O_3,5H_2O$, in grammes), and therefore correspond to 1·27 gramme of iodine ($\frac{1}{100}$th of an atomic weight in grammes).

This solution is used for testing the following substances.

In each case, excepting that of iodum, a solution of iodide of potassium and hydrochloric acid are added to the substance, and the amount of iodine so liberated is indicated by this solution.

	British weights and measures.				Metric weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Calx Chlorinata .	5·0	=	467	or	0·50	=	46·7
Iodum . . .	12·7	=	1000	or	1·27	=	100·0
Liq. Calc. Chlorinatæ	80·0	=	450	or	8·00	=	45·0
,, Chlori . .	439·0	=	750	or	43·90	=	75·0
,, Sodæ Chlorinatæ	70·0	=	500	or	7·00	=	50·0

VOLUMETRIC SOLUTION OF IODINE.

(Iodine, I = 127.)

Take of

Iodine	127 grains
Iodide of Potassium	180 grains
Distilled Water	a sufficiency

Put the iodide of potassium and the iodine into the 10,000 grain flask, fill the flask to about two-thirds its bulk with distilled water, gently agitate until solution is complete, and then dilute the solution with more water until it has the exact volume of 10,000 grain-measures. 1,000 grain-measures of this solution contain $\frac{1}{10}$th of an atomic weight in grains (12·7 grains) of iodine, and therefore correspond to 1·7 grain of sulphuretted hydrogen, 3·2 grains of sulphurous anhydride, and 4·95 grains of arsenious anhydride.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain 1·27 gramme of iodine, and correspond to 0·17 gramme of sulphuretted hydrogen, 0·32 gramme of sulphurous anhydride, and 0·495 gramme of arsenious anhydride.

This solution is used for testing the following substances. It is dropped from the burette into the liquid to be tested until free iodine begins to appear in the solution.

	British weights and measures.				Metric weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Acid. Arseniosum .	4·0	=	808	or	0·40	=	80·80
,, Sulphurosum .	64·0	=	1000	or	6·40	=	100·00
Liquor Arsenicalis .	442·0	=	875	or	44·20	=	87·50
,, Arsenici Hydrochloricus	442·0	=	875	or	44·20	=	87·50
Sodii Hyposulphis .	24·8	=	1000	or	2·48	=	100·00

VOLUMETRIC SOLUTION OF NITRATE OF SILVER.

(Nitrate of Silver, $AgNO_3 = 170$.)

Take of

Nitrate of Silver	170 grains
Distilled Water	a sufficiency

Put the nitrate of silver into the 10,000 grain flask, and, having half filled the flask with water, allow the salt to dissolve; then dilute the solution with more water until it has the exact bulk of 10,000 grain-measures. The solution should be kept in an opaque stoppered bottle. 1,000 grain-measures of this solution contain $\frac{1}{10}$th of a molecular weight in grains of nitrate of silver (or 17·0 grains).

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain $\frac{1}{100}$th of a molecular weight in grammes of nitrate of silver (or 1·7 gramme).

It is used in testing the following substances :—

	British weights and measures.				Metric weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Acid. Hydrocyan. Dil.	270	=	1000	or	27·0	=	100·0
Ammonii Bromidum.	5	=	508·5 to 514·5	or	0·5	=	50·85 to 51·45
Aqua Laurocerasi .	810	=	150	or	81·0	=	15·0
Potassii Bromidum .	10	=	838 to 850	or	1·0	=	83·8 to 85·0
Potassii Cyanidum .	10	=	730	or	1·0	=	73·0
Potassii Iodidum .	10	=	602	or	1·0	=	60·2
Sodii Bromidum .	10	=	960	or	1·0	=	96·0
Sodii Iodidum . .	10	=	660	or	1.0	=	66·0

VOLUMETRIC SOLUTION OF OXALIC ACID.

(Crystallised Oxalic Acid, $H_2C_2O_4,2H_2O=126.$)

Take of

Oxalic Acid, in crystals . . .	660 grains
Distilled Water	a sufficiency

Put the oxalic acid into the 10,000 grain flask, fill the flask to about two-thirds of its bulk with water, allow the acid to dissolve, and then dilute the solution with more water until it has the exact volume of 10,000 grain-measures. Fill a burette with the fluid, and add it gradually to a solution of 10·6 grains of pure carbonate of sodium (which may be obtained by heating the ordinary pure bicarbonate of sodium to redness in a platinum crucible for a quarter of an hour), containing a few drops of solution of litmus, until the red colour produced ceases to change to blue on boiling. Note the number of grain-measures used (n), then put 9,000 grain-measures of the solution of oxalic acid into a graduated jar, and augment this quantity by the addition of distilled water until it amounts to $\frac{9000\times 200}{n}$ grain-measures. 1,000 grain-measures of this solution contain half a molecular weight in grains (63 grains) of oxalic acid, and are therefore capable of neutralising one molecular weight in grains of such alkalies as potash, KHO, or soda, NaHO; or half the molecular weight in grains of such salts as anhydrous carbonate of sodium, Na_2CO_3, crystallised carbonate of sodium ($Na_2CO_3,10H_2O$), etc.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain $\frac{1}{20}$th of a molecular weight in grammes (6·3 grammes) of oxalic acid, and will neutralise $\frac{1}{10}$th of a molecular weight in grammes of an alkali.

The following substances are tested with this solution:—

	British weights and measures.				Metric weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance.	=	C. C. of Vol. Sol.
Ammonii Carbonas .	52·3	=	1000	or	5·23	=	100·0
Borax . . .	191·0	=	1000	or	19·10	=	100·0
Liquor Ammoniæ .	85·0	=	500	or	8·50	=	50·0
,, ,, Fort. .	52·3	=	1000	or	5·23	=	100·0
,, Calcis . .	4375·0	=	180	or	437·50	=	18·0
,, ,, Sacchar.	460·2	=	254	or	46·02	=	25·4
,, Plumbi Subacet.	284·5	=	500	or	28·45	=	50·0
,, Potassæ . .	462·9	=	482	or	46·29	=	48·2
,, ,, Efferves.	4375·0	=	150	or	437·50	=	15·0
,, Sodæ . .	458·0	=	470	or	45·80	=	47·0
,, ,, Efferves. .	4375·0	=	178	or	437·50	=	17·8
Plumbi Acetas .	38·0	=	200	or	3·80	=	20·0
Potassa Caustica .	56·0	=	900	or	5·60	=	90.0
Potassii Bicarbonas	50·0	=	500	or	5·00	=	50·0
,, Carbonas .	83·0	=	980	or	8·30	=	98·0
,, Citras . .	102·0	=	1000	or	10·20	=	100·0
,, Tartras .	122·0	=	990	or	12·20	=	99·0
,, ,, Acida	204·0	=	1000	or	20·40	=	100·0
Soda Caustica .	40·0	=	900	or	4·00	=	90·0
,, Tartarata .	141·0	=	990	or	14·10	=	99·0
Sodii Bicarbonas .	84·0	=	1000	or	8·40	=	100·0
,, Carbonas .	143·0	=	960	or	14·30	=	96·0
Sodium . . .	23·0	=	975	or	2·30	=	97·5
Spirit. Ammon. Arom.	392·0	=	558	or	39·20	=	55·8

VOLUMETRIC SOLUTION OF SODA.

(Hydrate of Sodium, $NaHO=40$.)

Take of

Solution of Soda	a sufficiency
Distilled Water	a sufficiency

Fill a burette with the solution of soda, and cautiously drop this into 1,000 grain-measures of the volumetric solution of oxalic acid until the acid is exactly neutralised as indicated by litmus. Note the number of grain-measures (n) of the solution of soda used, and having then introduced 9,000 grain-measures of it into a graduated jar, augment this quantity by the addition of water, until it becomes $\frac{9000\times1000}{n}$ grain-measures. If, for example, $n=930$, the 9,000 grain-measures should be augmented to $\frac{9000\times1000}{930}=9,677$ grain-measures. 1,000 grain-measures of this solution contain one molecular weight in grains (40 grains) of hydrate of sodium, and will therefore neutralise one molecular weight in grains of any monobasic acid, or half the molecular weight in grains of any dibasic acid, etc.

Grammes and cubic centimetres may be employed instead of grains and grain-measures, but for convenience $\frac{1}{10}$th of the numbers should be taken. 100 cubic centimetres contain $\frac{1}{10}$th of a molecular weight in grammes (4 grammes) of hydrate of sodium, and will neutralise $\frac{1}{10}$th of a molecular weight in grammes of a monobasic acid.

This solution is used for testing the following substances :—

	British weights and measures.				Metric weights and measures.		
	Grains weight of Substance.	=	Grain-measures of Vol. Sol.	or	Grams. wt. of Substance	=	C. C. of Vol. Sol.
Acetum . . .	445·4	=	402	or	44·54	=	40·2
Acidum Aceticum .	182·0	=	1000	or	18·20	=	100·0
,, ,, Dilutum	440·0	=	313	or	44·00	=	31·3
,, ,, Glaciale	60·0	=	990	or	6·00	=	99·0
,, Citricum .	70·0	=	1000	or	7·00	=	100·0
,, Hydrobrom. Dil.	810.0	=	1000	or	81·00	=	100·0
,, Hydrochloricum	114·8	=	1000	or	11·48	=	100·0
,, ,, Dilutum	345·0	=	1000	or	34·50	=	100·0
,, Lacticum .	120·0	=	1000	or	12·00	=	100·0
,, ,, Dilutum	700·0	=	1000	or	70·00	=	100·0
,, Nitricum .	90·0	=	1000	or	9·00	=	100·0
,, ,, Dilutum	361·3	=	1000	or	36·13	=	100·0
,, Nitro-hydrochl. Dil.	352·0	=	883	or	35·20	=	88·3
,, Sulphuricum .	50·0	=	1000	or	5·00	=	100·0
,, ,, Aromaticum	195·0	=	500	or	19·50	=	50·0
,, ,, Dilutum .	359·0	=	1000	or	35·90	=	100·0
,, Tartaricum .	25·0	=	330	or	2·50	=	33·0

INDICATORS OF THE TERMINATION OF REACTIONS IN VOLUMETRIC OPERATIONS.

Mucilage of Starch.

It gives an intense blue colour with iodine. It may be used with the following substances :—

Acidum Arseniosum
,, Sulphurosum
Calx Chlorinata
Iodum
Liquor Arsenicalis

Liquor Arsenici Hydrochloricus
,, Calcis Chlorinatæ
,, Sodæ Chlorinatæ
,, Chlori
Sodii Hyposulphis

Solution of Ferricyanide of Potassium.

It gives an intensely blue precipitate with ferrous salts, but none with ferric salts. It is used with the following substances:

Ferri Arsenias
,, Carbonas Saccharata
,, Phosphas
Ferri Sulphas
,, ,, Exsiccata
,, ,, Granulata

Solution of Litmus.

It gives a red colour with acids and a blue colour with alkalies. It may be used with the following substances:—

Acidum Hydrochloricum
,, ,, Dilutum
,, Nitricum
,, ,, Dilutum
,, Nitro-hydrochl. Dil.
,, Sulphuricum
,, ,, Arom.
,, ,, Dil.
Ammonii Carbonas
Borax
Liquor Ammoniæ
,, ,, Fortior
,, Calcis
,, ,, Saccharatus
Liquor Potassæ
,, ,, Effervescens
,, Sodæ
,, ,, Effervescens
Potassa Caustica
Potassii Bicarbonas
,, Carbonas
,, Citras
,, Tartras
,, ,, Acida
Soda Caustica
,, Tartarata
Sodii Bicarbonas
,, Carbonas
Spiritus Ammoniæ Aromaticus

Solution of Yellow Chromate of Potassium.

It gives a red colour with nitrate of silver, but not until any soluble bromide or iodide present is entirely decomposed. It may be used with the following substances:—

Ammonii Bromidum
Potassii Bromidum
Potassii Iodidum
Sodii Bromidum
Sodii Iodidum

Tincture of Phenol-Phthalein.

It gives an intense red colour with potash or soda. It may be used with the following substances:—

Acetum
Acidum Aceticum
,, ,, Dilutum
Acidum Aceticum Glaciale
,, Citricum
,, Tartaricum

SYMBOLS AND ATOMIC WEIGHTS OF THE ELEMENTARY BODIES mentioned in the British Pharmacopœia.

ELEMENTARY BODIES.	SYMBOLS AND ATOMIC WEIGHTS.
Aluminium	Al = 27
Antimony (Stibium)	Sb = 120
Arsenium	As = 75
Barium	Ba = 137
Bismuth	Bi = 209
Boron	B = 11
Bromine	Br = 80
Calcium	Ca = 40
Carbon	C = 12
Cerium	Ce = 141
Chlorine	Cl = 35·5
Chromium	Cr = 52·5
Copper (Cuprum)	Cu = 63·4
Gold (Aurum)	Au = 196·5
Hydrogen	H = 1
Iodine	I = 127
Iron (Ferrum)	Fe = 56
Lead (Plumbum)	Pb = 207
Lithium	L = 7
Magnesium	Mg = 24
Manganese	Mn = 55
Mercury (Hydrargyrum)	Hg = 200
Nitrogen	N = 14
Oxygen	O = 16
Phosphorus	P = 31
Platinum	Pt = 195
Potassium (Kalium)	K = 39
Silver (Argentum)	Ag = 108
Sodium (Natrium)	Na = 23
Sulphur	S = 32
Tin (Stannum)	Sn = 118
Zinc	Zn = 65

WEIGHTS AND MEASURES OF THE BRITISH PHARMACOPŒIA.

WEIGHTS.

1 Grain	gr.		
1 Ounce (Avoir.)	oz.		= 437·5 grains
1 Pound	lb. = 16 ounces		= 7000 ,,

MEASURES OF CAPACITY.

1 Minim	min.	
1 Fluid Drachm	fl. drm.	= 60 minims
1 Fluid Ounce	fl. oz.	= 8 fluid drachms
1 Pint	O.	= 20 fluid ounces
1 Gallon	C.	= 8 pints

MEASURES OF LENGTH.

1 inch	in.	
12 inches	= 1 foot	
36 inches	= 3 feet	= 1 yard

RELATION OF MEASURES TO WEIGHTS.

1 Minim	is the measure of	0·9114583	grains of water
1 Fluid Drachm	,,	54·6875	,,
1 Fluid Ounce	,, 1 ounce or	437·5	,,
1 Pint	,, 1·25 pound or	8750·0	,,
1 Gallon	,, 10 pounds or	70000·0	,,

WEIGHTS AND MEASURES OF THE METRIC SYSTEM.

WEIGHTS.

1 Milligramme = the thousandth part of one grm. or 0·001 grm.
1 Centigramme = the hundredth ,, 0·01 ,,
1 Decigramme = the tenth ,, 0·1 ,,
1 Gramme = weight of a cubic centimetre of water at 4° C. 1·0 ,,
1 Dekagramme = ten grammes ,, 10·0 ,,
1 Hectogramme = one hundred grammes ,, 100·0 ,,
1 Kilogramme = one thousand grammes ,, 1000·0 ,,

MEASURES OF CAPACITY.

1 Millilitre = 1 cub. centim. or the mea. of 1 gram. of water
1 Centilitre = 10 ,, 10 ,, ,,
1 Decilitre = 100 ,, 100 ,, ,,
1 Litre = 1000 ,, 1000 ,, (1 kilo.)

MEASURES OF LENGTH.

1 Millimetre = the thousandth part of one metre or 0·001 metre
1 Centimetre = the hundredth ,, 0·01 ,,
1 Decimetre = the tenth part ,, 0·1 ,,
1 Metre 1·0 ,,

RELATION OF THE WEIGHTS OF THE BRITISH PHARMACOPŒIA TO THE METRIC WEIGHTS.

1 Pound = 453·5927 grammes
1 Ounce = 28·3495 ,,
1 Grain = 0·0648 ,,

RELATION OF MEASURES OF CAPACITY OF THE BRITISH PHARMACOPŒIA TO THE METRIC MEASURES.

1 Gallon	=4·543458 litres		
1 Pint	=0·567932 ,,	or 567·932 cubic centimetres	
1 Fluid Ounce	=0·028397 ,,	28·397	,,
1 Fluid Drachm	=0·003550 ,,	3·550	,,
1 Minim	=0·000059 ,,	0·059	,,

RELATION OF THE METRIC WEIGHTS TO THE WEIGHTS OF THE BRITISH PHARMACOPŒIA.

1 Milligramme	=	0·015432	grains
1 Centigramme	=	0·15432	,,
1 Decigramme	=	1·5432	,,
1 Gramme	=	15·432	,,
1 Kilogramme = 2 lbs. 3 oz. 119·8 grs. or		15432·349	,,

RELATION OF THE METRIC MEASURES TO THE MEASURES OF THE BRITISH PHARMACOPŒIA.

1 Millimetre = 0·03937 inches
1 Centimetre = 0·39371 ,,
1 Decimetre = 3·93708 ,,
1 Metre =39·37079 ,, or 1 yard 3·37 inches
1 Cubic Centimetre = 15·432 grains[1]
1 Litre=1·76077 pint or 1 pint 15 oz. 1 dr. 43 m.

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[1] The cubic centimetre is a standard at 4° C. (39°·2 F.), the grain at 62° F. (16°·66 C.)

LIST OF BOOKS REFERRED TO, CONTAINING PLATES OF OFFICIAL PLANTS.

Annales des Sciences Naturelles, 3rd series, 4to. Paris, 1853.

Bentley and Trimen, *Medicinal Plants.* 4 vols. large 8vo. London, 1875—1880.

Berg und Schmidt, *Darstellung und Beschreibung sämmtlicher in der Pharmacopœa Borussica aufgeführten offizinellen Gewächse.* 4 vols. 4to. Leipzig, 1858—1863.

Botanical Magazine. 8vo. London, 1787—1885.

Botanical Register. 33 vols. 8vo. London, 1815—1847.

Hooker, *Flora Boreali-americana.* 2 vols. London, 1833, 1840.

Hooker, *Icones Plantarum*, 15 vols. 8vo. London, 1837—1885.

Hooker, *Journal of Botany.* 3rd series, 9 vols. 8vo. 1849—1857.

Howard, *Illustrations of the Nueva Quinologia of Pavon.* Folio. London, 1862.

Lambert, *A Description of the genus Pinus.* 2 vols. folio. London, 1803, 1828.

Moore and Lindley, *Ferns of Great Britain.* London.

Nees von Esenbeck, *Plantæ Medicinales.* 2 vols. folio. Düsseldorf, 1828.

Pharmaceutical Journal. 8vo. London, 1842—1885.

Philosophical Transactions of the Royal Society. 4to. London, 1665—1885.

Risso et Poiteau, *Histoire Naturelle des Orangers.* Folio. Paris, 1818.

Roxburgh, *Plants of the Coast of Coromandel.* 3 vols. folio. London, 1795—1819.

Royle, *Illustrations of the Botany of the Himalayan Mountains, and of the Flora of Cashmere.* 2 vols. 4to. London, 1839.

Ruiz and Pavon, *Flora Peruviana et Chilensis.* 3 vols. folio. Madrid, 1798—1802.

Rumphius, *Herbarium Amboinense.* 6 vols. folio. Amsterdam, 1741—1755.

Stephenson and Churchill, *Medical Botany.* 4 vols. 8vo. London, 1831.

Transactions of the Linnean Society of London. 4to. London, 1791—1885.

Transactions of the Royal Society of Edinburgh. 4to. Edinburgh, 1788—1885.

Wallich, *Plantæ Asiaticæ rariores.* 3 vols. folio. London, 1830—1832.

Wight, *Icones Plantarum Indiæ Orientalis.* 6 vols. 4to. Madras, 1838—1853.

Woodville, *Medical Botany,* 4 vols. 4to. London, 1790—1794.

Linteum Acidi Borici Lint dipped in a hot saturated solution of Boric Acid & then dried.

INDEX.

Synonyms are printed in italics. Articles included in the Appendix are preceded by an asterisk (*).

PAGE
Absolute Alcohol . . 37
Acaciæ Gummi 1
Acetate of Ammonium, Solution of 230
— — — Strong 230
*— Copper, Solution of . . 479
— *Ethyl* 35
— Iron, Solution of . . . 239
— — — Strong 239
— — Tincture of 419
— Lead 313
— — Ointment of 451
— Morphine 273
— — Solution of 248
— *Potash* 320
— Potassium 320
*— — Solution of 479
*— Sodium 475
*— — Solution of 479
— Zinc 465
Acetic Acid 3
— — Diluted 4
— — Glacial 5
— — and Turpentine, Liniment of 227
— Ether 35
— Extract of Colchicum . . 155
Acetum 2
— Cantharidis 2
— Scillæ 3
Acid, Acetic 3
— — Diluted 4
— — Glacial 5
— — and Turpentine, Liniment of 227

PAGE
Acid, Arsenious 5
— Benzoic 6
— — Lozenges 437
— *Boracic* 7
— — *Ointment of* 443
— Boric 7
— — Ointment of 443
*— — Solution of 481
— Carbolic 8
— — Glycerine of 189
— — Ointment of 443
— — Liquefied 9
— — Suppositories 392
— *Carbonate of Potassium* . 321
— Chromic 9
— — Solution of 227
— Citric 10
— Gallic 12
— — Glycerine of 189
— Hydrobromic, Diluted . . 12
— Hydrochloric 13
— — Diluted 15
— Hydrocyanic, Diluted . . 16
— — Inhalation of 457
— Infusion of Roses . . . 210
— — Cinchona 206
— Lactic 17
— — Diluted 18
— Meconic 18
— *Muriatic* 13
— Nitric 18
— — Diluted 19
— Nitro-hydrochloric, Diluted 20
— Oleic 21

PAGE
*Acid, Oxalic, of Commerce . 476
*— — Volumetric Solution of 493
— *Phenic* 8
— Phosphoric, Concentrated 21
— — Diluted 23
— Salicylic 23
— — Ointment of 443
— Solution of Nitrate of Mercury 245
— Sulphuric 24
— — Aromatic 25
— — Diluted 26
— Sulphurous 27
— Tannic 28
— — Glycerine of 189
— — Lozenges 437
— — Suppositories of . . . 393
— Tartaric 29
*— —Solution of 486
— Tartrate of Potassium . . 333
Acidum Aceticum 3
— — Dilutum 4
— — Glaciale 5
— Arseniosum 5
— Benzoicum 6
— Boricum 7
— Carbolicum 8
— — Liquefactum 9
— Chromicum 9
— Citricum 10
— Gallicum 12
— Hydrobromicum Dilutum 12
— Hydrochloricum 13
— — Dilutum 15
— Hydrocyanicum Dilutum . 16
— Lacticum 17
— — Dilutum 18
— Meconicum 18
— Nitricum 18
— — Dilutum 19
— Nitro-hydrochloricum Dilutum 20
— Oleicum 21
— Phosphoricum Concentratum 21
— — Dilutum 23
— Salicylicum 23
— Sulphuricum 24
— — Aromaticum 25
— — Dilutum 26
— Sulphurosum 27
— Tannicum 28

PAGE
Acidum, Tartaricum . . . 29
Aconite, Extract of 147
— Leaves 30
— Liniment of 222
— Root 30
— Tincture of 407
Aconitia 31
Aconiti Folia 30
— Radix 30
Aconitina 31
Aconitine 31
— Ointment of 444
Actææ Radix 110
Actæa, Tincture of 415
Adeps Benzoatus 32
— Præparatus 33
Æther 34
— Aceticus 35
— Purus 36
Albumen, Egg 298
— Ovi 298
*— Solution of 480
Alcohol, Absolute 37
— Amylic 37
— Ethylic 37
Alexandrian Senna 360
Almond, Bitter 46
— Mixture 269
— Oil 282
— Sweet 47
Almonds, Powder of, Compound 334
Aloe Barbadensis 38
— Socotrina 39
Aloes and Asafœtida, Pill of 305
— Barbadoes 38
— — Extract of 148
— — Pill of 304
— Curaçoa 38
— Decoction of, Compound . 132
— Enema of 144
— Hepatic 39
— and Iron, Pill of 305
— and Myrrh, Pill of . . . 305
— Socotrine 39
— — Extract of 148
— — Pill of 306
— Tincture of 407
— Wine of 461
— Zanzibar 39
Aloin 40
Alum 40

PAGE
Alum, Ammonia 41
— Dried 41
— *Potash* 40
Alumen 40
— Exsiccatum 41
Ammonia Alum 41
Ammonia, Aromatic Spirit of 379
— Fetid Spirit of 380
— Liniment of 223
— Salts. *See* Ammonium.
— Solution of 228
— — Strong 228
Ammoniacum 41
— and Mercury Plaster . . 139
— Mixture 269
Ammoniæ Benzoas 42
— *Carbonas* 43
— *Nitras* 45
— *Phosphas* 46
— *Sesquicarbonas* 43
Ammoniated Mercury . . . 202
— — Ointment of 448
— Tincture of Guaiacum . . 421
— — Opium 428
— — Quinine 429
— — Valerian 434
Ammonii Benzoas 42
— Bromidum 43
— Carbonas 43
— Chloridum 44
— Nitras 45
— Phosphas 46
*Ammonio-nitrate of Silver, Solution of 480
*Ammonio-sulphate of Copper, Solution of . . . 480
*— Magnesium, Solution of . 480
Ammonium, Acetate of, Solutions of 230
— Benzoate of 42
— Bromide of 43
— Carbonate of 43
*— — Solution of 481
— Chloride of 44
*— — Solution of 481
— Citrate of, Solution of . . 231
— — — Strong 231
*— Molybdate of 476
— Nitrate of 45
*— Oxalate of 476
*— — Solution of 483
— Phosphate of 46
*Ammonium, Sulphydrate of, Solution of 486
Amygdala Amara 46
— Dulcis 47
Amyl, Hydrate of 37
— Nitris 47
— Nitrite of 47
Amylic Alcohol 37
*— — Benzolated 475
Amylum 48
Anethi Fructus 49
Anhydride, Arsenious . . . 5
— *Chromic* 9
Anhydrous Arsenious Acid . 5
— *Chromic Acid* 9
Anhydrochromate of Potassium 322
Animal Charcoal 95
— — Purified 95
Anise, Essence of 147
— Fruit 49
— Oil of 283
— Water 56
Anisi Fructus 49
— Stellati Fructus . . . 50
Anthemidis Flores 50
Antimonial Powder . . . 335
— Wine 461
Antimonii Oxidum 51
— *Potassio-tartras* 54
Antimonium Nigrum Purificatum 52
— Sulphuratum 53
— Tartaratum 54
— *Tartarizatum* 54
Antimony, Purified Black . 52
— Chloride of, Solution of . 232
— Oxide of 51
— *and Potassium, Oxytartrate of* 54
— *Sulphide of, Native* . . 52
— Sulphurated 53
— Tartarated 54
— — Ointment of 444
Apomorphiæ Hydrochloras . 55
Apomorphinæ Hydrochloras . 55
Apomorphine, Hydrochlorate of 55
— Hypodermic Injection of . 212
*Apparatus for Volumetric Analysis 488
Aqua 55

PAGE
Aqua Anethi 56
— Anisi 56
— Aurantii Floris 56
— *Calcis* 236
— Camphoræ 57
— Carui 57
— Chloroformi 57
— Cinnamomi 58
— Destillata 58
— Fœniculi 58
— Laurocerasi 59
— *Lithiæ Effervescens* . . 246
— Menthæ Piperitæ . . . 59
— — Viridis 59
— Pimentæ 60
— *Potassæ Effervescens* . . 252
— Rosæ 60
— Sambuci 60
— *Sodæ Effervescens* . . . 255
Araroba Powder 109
Argenti et Potassii Nitras . 60
— Nitras 61
— Oxidum 62
Argentum Purificatum . . 63
Armoraciæ Radix 63
Arnica Rhizome 64
— Tincture of 408
Arnicæ Radix 64
Arnicæ Rhizoma 64
Aromatic Mixture of Iron . 270
— Powder of Chalk . . . 336
— — — and Opium . . . 336
— Spirit of Ammonia . . . 379
— Sulphuric Acid 25
Arseniate of Iron 172
— *Soda* 365
— Sodium 365
— — Solution of 255
Arsenic 5
Arsenical Solution 233
Arsenic, Iodide of 64
— Solution of, Hydrochloric 233
Arsenicum Album 5
Arsenic, White 5
Arsenii Iodidum 64
Arsenious Iodide 64
— Acid 5
— *Anhydride* 5
Arsenium, Iodide of . . . 64
*Articles employed in Chemical Testing 475
Asafœtida 65

PAGE
Asafœtida and Aloes, Pill of 305
— Compound Pill of . . . 306
— Enema of 145
— Tincture of 408
*Atomic Weights, List of . . 497
Atropia 65
— *Sulphate of* 67
Atropiæ Sulphas 67
Atropina 67
Atropinæ Sulphas 65
Atropine 65
— Discs of 219
— Ointment of 444
— Sulphate of 67
— — Solution of 235
Aurantii Cortex 67
— Fructus 68
— *Pericarpium* 67

BAEL Fruit 71
— Liquid Extract of . . 149
Balsam, Canada 405
— of Peru 68
— of Tolu 69
Balsamum Peruvianum . . 68
— Tolutanum 69
Barbadoes Aloes 38
— — Extract of 148
— — Pill of 304
*Barium, Chloride of . . . 475
*— — Solution of 482
Bark, Bebeeru 280
— Canella 93
— Cascarilla 98
— Cinchona 110
— — Red 111
— Cinnamon 115
— Cusparia 130
— Frangula 345
— Larch 220
— Mezereon 268
— Oak 341
— — Decoction of 134
— Pomegranate Root . . . 193
— Sacred 346
Barley, Pearl 196
— Decoction of 134
Basic Ferric Oxychloride . 240
Bean, Calabar 303
— — Extract of 166
Bearberry, Infusion of . . 211

PAGE
Bearberry Leaves 456
Bebeeru Bark 280
Beberiæ Sulphas 70
Beberinæ Sulphas 70
Beberine, Sulphate of . . . 70
Beer Yeast 103
Belæ Fructus 71
Belladonna, Extract of . . 150
— — Alcoholic 150
— Juice of 388
— Leaves 72
— Liniment of 223
— Ointment of 444
— Plaster 139
— Root 72
— Tincture of 409
Belladonnæ Folia 72
— Radix 72
Benzoate of Ammonia . . . 42
— Ammonium 42
Benzoated Lard 32
Benzoic Acid 6
— — Lozenges 437
Benzoin 73
— Tincture of, Compound . 410
*Benzol 475
*Benzolated Amylic Alcohol . 475
**Benzoline* 477
Bicarbonate of Potash . . . 321
— Potassium 321
— *Soda* 366
— Sodium 366
— — Lozenges 442
Bichromate of Potash . . . 322
— Potassium 322
*— — Volumetric Solution of 489
Bile, Purified Ox 171
Bimeconate of Morphine, Solution of 249
Bismuth 78
— Carbonate of 74
— Citrate of 75
— — and Ammonium . . . 76
— — Solution of 235
— Lozenges 438
— Oxide of 77
— *Oxynitrate of* 77
— Purified 79
— Subnitrate of 77
Bismuthi et Ammonii Citras 76
— Carbonas 74
— Citras 75

PAGE
Bismuthi Oxidum 77
— Subnitras 77
Bismuthum 78
— Purificatum 79
Bitartrate of Potash . . . 333
Bitter Almond 46
— Orange 68
— — Peel 67
Black Antimony, Purified . 52
— *Draught* 272
— Mercurial Lotion . . . 259
— Oxide of Manganese . . 264
— Pepper 312
*— Platinum 477
Blistering Collodion . . . 120
— Liquid 239
— Paper 105
*Blue Litmus Paper 476
— *Pill* 308
Bone Ash 298
— Black 95
*Books containing Plates of Official Plants . . . 501
Boracic Acid 7
— — *Ointment of* 443
Borax 80
— Glycerine of 190
— Honey 267
Boric Acid 7
— — Ointment of 443
*— — Solution of 481
Brandy, French 385
— — Mixture of 272
Bread, Crumb of 269
Bromide of Ammonium . . 43
— Potassium 322
— Sodium 367
Bromine 80
*— Solution of 481
Broom, Decoction of . . . 135
— Juice of 389
— Tops 359
Brown Soap Plaster . . . 144
Buchu Folia 81
— Infusion of 204
— Leaves 81
— Tincture of 410
Burgundy Pitch 313
Butter, Cacao 294
Butyl-Chloral, Hydrate of . 82
— Hydras 82
— *Hydrous* 82

PAGE

CABBAGE-Rose Petals . . 348
Cacao Butter 294
Caffeia 82
Caffeina 82
Caffeinæ Citras 83
Caffeine 82
— Citrate of 83
Cajuput, Oil of 283
— Spirit of 380
Calabar Bean 303
— — Extract of 166
Calamina Præparata . . . 84
Calamine, Prepared . . . 84
— Ointment of 445
Calcii Carbonas Præcipitata . 84
— Chloridum 85
— Hydras 86
— Hypophosphis 86
— Phosphas 87
— Sulphas 88
— *Sulphidum* 90
Calcis Carbonas Præcipitata 84
— *Hydras* 86
— *Hypophosphis* . . . 86
— *Phosphas* 87
— *Sulphas* 88
Calcium, Carbonate of, Native 265
— — Precipitated 84
— Chloride of 85
— — Solution of 236
— Hydrate of 86
— Hypophosphite of . . . 86
— Phosphate of 87
— Sulphate of 88
— *Sulphide of* 90
Calomel 200
Calomelas 200
Calumba, Extract of . . . 151
— Infusion of 205
— Root 88
— Tincture of 410
Calumbæ Radix 88
Calx 89
— Chlorinata 90
— Sulphurata 90
Cambogia 91
Camphor 92
— Liniment of 223
— — Compound 224
— Spirit of 381

PAGE

Camphor, Tincture of, Compound 411
— Water 57
Camphora 92
Camphoræ Mistura . . . 57
Canada Balsam 405
Canella Bark 93
Canellæ Cortex 93
Cannabis Indica 93
Cantharides 94
— Ointment of 445
— Plaster 140
— Tincture of 411
— Vinegar of 2
Cantharis 94
Capsici Fructus 94
Capsicum Fruit 94
— Tincture of 412
Capsules, Poppy 299
Caraway Fruit 97
— Oil of 284
— Water 57
Carbo Animalis 95
— — Purificatus 95
— Ligni 96
Carbolic Acid 8
— — Glycerine of 189
— — Liquefied 9
— — Ointment of 443
— — Suppositories . . . 392
Carbonate of Ammonium . 43
*— — Solution of 481
— *Calcium, Native* . . . 265
— — Precipitated 84
— Bismuth 74
— Iron, Pill of 308
— — Saccharated 173
— Lead 314
— — Ointment of 451
— *Lime, Precipitated* . . 84
— Lithium 257
— *Magnesia, Heavy* . . . 263
— — *Light* 262
— Magnesium, Heavy . . 263
— — Light 262
— — Solution of 247
— *Potash* 323
— Potassium 323
— *Soda* 367
— Sodium 367
— — Dried 368
— Zinc 466

PAGE
Carbonate of Zinc, Native . 84
Cardamoms 96
— Tincture of, Compound . 412
Cardamomi Semina . . . 96
Carui Fructus 97
Caryophyllum 98
Cascara Sagrada 346
— — Extract of 151
— — — Liquid 152
Cascarilla Bark 98
— Infusion of 205
— Tincture of 413
Cascarillæ Cortex 98
Cassia Pulp 99
Castile Soap 354
Cataplasma Carbonis . . . 99
— Conii 100
— Fermenti 100
— Lini 100
— Sinapis 100
— Sodæ Chlorinatæ . . . 101
Catechu 101
— Infusion of 205
— Lozenges 438
— *Pallidum* 101
— Powder of, Compound . 335
— Tincture of 413
Caustic, Lunar 61
— *Mitigated* 60
— Potash 318
— Soda 363
— Toughened 62
Cera Alba 102
— Flava 102
Cerevisiæ Fermentum . . . 103
Cerium, Oxalate of 103
Cetaceum 104
Cetraria 105
Cevadilla 349
Chalk 127
— Aromatic Powder of . . 336
— Mercury with 202
— Mixture 270
— and Opium, Aromatic Powder of 336
— Prepared 127
Chalybeate Plaster 141
Chamomile, Extract of . . 149
— Flowers 50
— Infusion of 204
— Oil of 283
Charcoal, Animal 95

PAGE
Charcoal, Animal, Purified . 95
— Poultice 99
— Wood 96
Charta Epispastica 105
— Sinapis 106
Cherry-Laurel Leaves . . . 220
— Water 59
Chirata 106
Chiretta 106
— Infusion of 206
— Tincture of 413
Chloral Hydras 107
— Hydrate of 107
— Hydrous 107
— Syrup of 397
Chlorate of Potash 324
Chlorate of Potassium . . 324
— — Lozenges 441
Chloride of Ammonium . . 44
*— — Solution of 481
— Antimony, Solution of . 232
*— Barium 475
*— — Solution of 482
— Calcium 85
— — Solution of 236
— *Mercuric-Ammonium* . . 202
— Sodium 369
— Zinc 467
— — Solution of 257
Chlorinated Lime 90
— — Solution of 237
— Soda, Solution of . . . 254
Chlorine 238
— Inhalation of 457
— Poultice 101
— Solution of 238
Chloroform 108
— Compound Tincture of . 414
— Liniment of 224
— and Morphine, Tincture of 414
— Spirit of 381
— Water 57
Chloroformum 108
Chloroxide of Iron, Sol. of . 240
Chromic Acid 9
— *Anhydride* 9
Chrysarobin 109
— Ointment of 446
Chrysarobinum 109
Cimicifuga 110
— Liquid Extract of . . . 152
— Tincture of 415

PAGE
Cimicifugæ Rhizoma 110
Cinchona Bark 110
— — Red 111
— Decoction of 133
— Extract of, Liquid . . . 153
— Infusion of, Acid . . . 206
— Tincture of 415
— — Compound 416
Cinchonæ Cortex 110
— Rubræ Cortex 111
Cinchonidine, Sulphate of . 113
Cinchonine, Sulphate of . . 114
Cinnamomi Cortex 115
Cinnamon Bark 115
— Oil of 284
— Powder of, Compound . . 335
— Spirit of 381
— Tincture of 416
— Water 58
Citrate of Ammonium, Sol. of 231
— — — Strong 231
— Bismuth 75
— — and Ammonium . . 76
— — — Solution of . . . 235
— Caffeine 83
— Iron and Ammonium . . 174
— — Quinine 175
— — Wine of 462
— *Lithia* 258
— Lithium 258
— Magnesium, Solution of . 248
— *Potash* 325
— Potassium 325
Citric Acid 10
Citro-tart. of Soda, Efferv. . 369
Citro-tart. of Sodium, Efferv. 369
Clarified Honey 267
Clove 98
— Infusion of 205
— Oil of 284
Coca 115
— Liquid Extract of . . . 154
Cocainæ Hydrochloras . . 116
Cocaine, Discs of 219
— Hydrochlorate of . . . 116
Coccus 117
Cochineal 117
— Tincture of 417
Codeia 117
Codeina 117
Codeine 117
Colchici Cormus 118

PAGE
Colchici Semina 119
Colchicum Corm 118
— Extract of 155
— — Acetic 155
— Seeds 119
— — Tincture of 417
— Wine 462
Collodion 119
— Flexible 119
— Blistering 120
Collodium 119
— Flexile 119
— Vesicans 120
Colocynth, Compound Pill of 307
— Extract of, Compound . . 155
— and Henbane, Pill of . . 307
— Pulp 120
Colocynthidis Pulpa . . . 120
Common Frankincense . . 406
— Salt 369
Compound Decoction of Aloes 132
— — of Sarsaparilla . . . 135
— Extract of Colocynth . . 155
— Infusion of Gentian . . 208
— — Orange Peel 204
— Lead Suppositories . . . 395
— Liniment of Camphor . . 224
— — of Mustard 226
— Mixture of Iron 271
— — of Senna 272
— Ointment of Mercury . . 448
— Pill of Asafœtida . . . 306
— — Colocynth 307
— — Hemlock 307
— — Rhubarb 310
— — Soap 311
— — Squill 311
— — Subchloride of Mercury 309
— Powder of Almonds . . 334
— — Catechu 335
— — Cinnamon 335
— — Elaterin 337
— — Ipecacuanha 337
— — Jalap 338
— — Kino 338
— — Liquorice 337
— — Opium 339
— — Rhubarb 339
— — Scammony 339
— — Tragacanth 340
— Spirit of Horseradish . . 380
— Tincture of Benzoin . . 410

PAGE
Compound Tincture of Camphor 411
— — Cardamoms 412
— — Chloroform 414
— — Cinchona 415
— — Gentian 421
— — Lavender 424
Concentrated Phosphoric Acid 21
Confectio Aromatica . . . 336
— Opii 121
— Piperis 121
— Rosæ Caninæ 121
— — Gallicæ 121
— Scammonii 122
— Sennæ 122
— Sulphuris 123
— Terebinthinæ 123
Confection of Hips 121
— Opium 121
— Pepper 121
— Roses 121
— Scammony 122
— Senna 122
— Sulphur 123
— Turpentine 123
Conine, Inhalation of . . . 457
Conii Folia 124
— Fructus 124
Copaiba 125
Copaiva 125
— Oil of 285
Copper 130
*— Acetate of, Solution of . 479
*— Ammonio-Sulphate of, Solution of 480
*— Foil 475
— Nitrate of 129
*— Subacetate of. 477
— Sulphate of 129
*— — Anhydrous 477
Coriander Fruit 125
— Oil of 285
Coriandri Fructus 125
Corm, Colchicum 118
Corrosive Sublimate . . . 198
Cortex Frangulæ 345
Cotton 192
— Wool 192
Cream of Tartar 333
Creasote 126
— Inhalation of 458

PAGE
Creasote Mixture 269
— Ointment of 446
Creasotum 126
Creta 127
— Præparata 127
Crocus 127
Croton-Chloral Hydrate . . 82
— Oil 285
— — Liniment of 224
Crumb of Bread 269
Cubebs 129
— Oil of 286
— Oleo-resin of 282
— Tincture of 418
Cuca 115
Cupric Nitrate 129
Cupri Nitras 129
— Sulphas 129
Cuprum 130
Curaçoa Aloes 38
Curd Soap 354
Cusparia Bark 130
— Infusion of 206
Cuspariæ Cortex 130
Cusso 131
Cyanide of Potassium . . . 326

DANDELION, Decoction of 136
— Extract of 170
— Juice of 389
— Root 404
Decoction of Aloes, Compound 132
— Barley 134
— Broom 135
— Cinchona 133
— Dandelion 136
— Iceland Moss 132
— Logwood 133
— Oak Bark 134
— Pareira 134
— Pomegranate Root . . . 133
— Poppy 134
— Sarsaparilla 135
— — Compound 135
Decoctum Aloes Compositum 132
— Cetrariæ 132
— Cinchonæ 133
— Granati Radicis 133
— Hæmatoxyli 133
— Hordei 134
— Papaveris 134

PAGE
Decoctum Pareiræ 134
— Quercûs 134
— Sarsæ 135
— — Compositum 135
— Scoparii 135
— Taraxaci 136
Digitalis Folia 136
Dill Fruit 49
— Oil of 282
— Water 56
Diluted Acetic Acid 4
— Hydrobromic Acid . . . 12
— Hydrochloric Acid . . . 15
— Hydrocyanic Acid . . . 16
— Lactic Acid 18
— Nitric Acid 19
— Nitro-hydrochloric Acid . 20
— Phosphoric Acid 23
— Sol. of Subacetate of Lead 521
— Sulphuric Acid 26
Discs of Atropine 219
— Physostigmine 220
— Cocaine 219
Distilled Water 58
Dog Rose, Fruit of 347
Donovan's Solution . . . 234
Dried Alum 41
— *Carbonate of Soda* . . . 368
— — of Sodium 368
— Sulphate of Iron . . . 180

EAST Indian Senna . . 361
Ecballii Fructus 137
Effervescent Citro-tartrate of Soda 369
— — Sodium 369
— *Sol. of Citrates of Magnesium and Potassium* 248
— — Lithia 246
— — Potash 252
— — Soda 255
Egg, White of 298
— Yolk of 298
Elaterii Extractum . . . 138
— *Fructus* 137
Elaterin 137
— Compound Powder of . . 337
Elaterinum 137
Elaterium 138
Elder Flowers 351
— Flower Water 60
Elemi 138

PAGE
Elemi, Ointment of . . . 446
Emetic Tartar 54
Emplastrum Ammoniaci cum Hydrargyro 139
— Belladonnæ 139
— Calefaciens 140
— Cantharidis 140
— *Cerati Saponis* 144
— Ferri 141
— Galbani 141
— Hydrargyri 141
— Opii 142
— Picis 142
— Plumbi 142
— — Iodidi 143
— Resinæ 143
— Saponis 143
— — Fuscum 144
Enema Aloes 144
— Asafœtidæ 145
— Magnesii Sulphatis . . 145
— Opii 145
— Terebinthinæ 145
Enema of Aloes 144
— Asafœtida 145
— Opium 145
— Sulphate of Magnesium . 145
— Turpentine 146
Epsom Salt 264
Ergot 146
— Extract of, Liquid . . . 156
— Infusion of 207
— Tincture of 419
Ergota 146
Ergotin 146
— Hypodermic Injection of . 212
Ergotinum 146
Eserine 303
Essence of Anise 147
— *Ginger* 435
— Peppermint 147
Essentia Anisi 147
— Menthæ Piperitæ . . . 147
Ether 34
— Acetic 35
— Nitrous, Spirit of . . . 377
— Pure 36
— Spirit of 377
— — Compound 377
Ethereal Extract of Mezereon 162
— Tincture of Lobelia . . 426
Ethyl, Acetate of 35
— *Oxide of* 36

PAGE
Ethylic Alcohol 37
Eucalyptus Oil 286
— Ointment of 446
Expressed Oil of Nutmeg . . 289
Extract of Aconite 147
— Bael, Liquid 149
— Barbadoes Aloes 148
— Belladonna 150
— — Alcoholic 150
— Calabar Bean 166
— Calumba 151
— Cascara Sagrada . . . 151
— — — Liquid 152
— Chamomile 149
— Cimicifuga, Liquid . . . 152
— Cinchona, Liquid . . . 153
— Coca, Liquid 154
— Colchicum 155
— — Acetic 155
— Colocynth, Compound . . 155
— Dandelion 170
— — Liquid 170
— Gelsemium, Alcoholic . . 157
— Ergot, Liquid 156
— Gentian 158
— Hemlock 156
— Henbane 159
— Hop 162
— Indian Hemp 151
— Jaborandi 160
— Jalap 160
— Lettuce 161
— Liquorice 158
— — Liquid 159
— Logwood 159
— Male Fern, Liquid . . . 157
— Mezereon, Ethereal . . 162
— Nux Vomica 163
— Opium 164
— — Liquid 164
— Pareira 165
— — Liquid 166
— Poppies 165
— Quassia 167
— Rhamnus Frangula . . 167
— — — Liquid 168
— Rhatany 161
— Rhubarb 168
— Sarsaparilla, Liquid . . 169
— Socotrine Aloes 148
— Stramonium 169
Extractum Aconiti 147

PAGE
Extractum Aloes Barbadensis 148
— — Socotrinæ 148
— Anthemidis 149
— Belæ Liquidum 149
— Belladonnæ 150
— — Alcoholicum 150
— Calumbæ 151
— Cannabis Indicæ . . . 151
— Cascaræ Sagradæ . . . 151
— — — Liquidum 152
— Cimicifugæ Liquidum . . 152
— Cinchonæ Liquidum . . 153
— Cocæ Liquidum 154
— Colchici 155
— — Aceticum 155
— Colocynthidis Compositum 155
— Conii 156
— *Elaterii* 138
— Ergotæ Liquidum . . . 156
— Filicis Liquidum . . . 157
— *Frangulæ* 167
— Gelsemii Alcoholicum . . 157
— Gentianæ 158
— Glycyrrhizæ 158
— — Liquidum 159
— Hæmatoxyli 159
— Hyoscyami 159
— Jaborandi 160
— Jalapæ 160
— Krameriæ 161
— Lactucæ 161
— Lupuli 162
— Mezerei Æthereum . . . 162
— Nucis Vomicæ 163
— Opii 164
— — Liquidum 164
— Papaveris 165
— Pareiræ 165
— — Liquidum 166
— Physostigmatis 166
— Quassiæ 167
— Rhamni Frangulæ . . . 167
— — — Liquidum 168
— — *Purshiani* 151
— — — *Liquidum* 152
— Rhei 168
— Sarsæ Liquidum 169
— Stramonii 169
— Taraxaci 170
— — Liquidum 170

PAGE
FARINA Tritici 171
Fel Bovinum Purificatum . 171
Fennel Fruit 185
— Water 58
Fern, Male 184
*Ferricyanide of Potassium . 475
*— — Solution of 482
Ferric Acetate, Solution of . 239
— *Chloride, Solution of* . . 241
— *Oxychloride, Basic* . . . 240
— *Oxyhydrate* 177
— *Sulphate, Solution of* . . 244
Ferri et Ammonii Citras . . 174
— Arsenias 172
— Carbonas Saccharata . . 173
— *Oxidum Rubrum* . . . 177
— Peroxidum Hydratum . . 177
— Phosphas 178
— *Potassio-tartras* 183
— et Quininæ Citras . . . 175
— *Sesquioxidum* 177
— Sulphas 179
— — Exsiccata 180
— — Granulata 180
Ferrocyanide of Potassium . 327
*— — Solution of 482
Ferrum 181
— Redactum 181
— Tartaratum 183
— *Tartarizatum* 183
Fetid Spirit of Ammonia . . 380
Ficus 184
Fig 184
Filix Mas 184
*Fine Gold 475
Fir-wool Oil 291
— — Inhalation of 458
Flexible Collodion 119
Flour, Wheaten 171
Flower, Elder, Water . . . 60
— Orange, Syrup of . . . 397
— — Water 56
Flowers, Chamomile . . . 50
— Elder 351
Fluid Magnesia 247
Fœniculi Fructus 185
*Foil, Copper 475
*— Platinum 477
Fousel Oil 37
Fowler's Solution 233
Foxglove Leaves 136
— Infusion of 207

PAGE
Foxglove, Tincture of . . . 418
Frankincense, Common . . 406
French Brandy 385
— — Mixture of 272
Fresh Orange Peel, Tincture of 409
Fruit, Anise 49
— Bael 71
— Capsicum 94
— Caraway 97
— Coriander 125
— Dill 49
— Dog-rose 347
— Fennel 185
— Hemlock 124
— Squirting Cucumber . . 137
— Star-anise 50

GALBANUM 186
— Plaster 141
Galla 186
Gallic Acid 12
— — Glycerine of 189
Galls 186
— Ointment of 447
— and Opium, Ointment of . 447
— Tincture of 420
Gamboge 91
— Pill of, Compound . . . 306
Gelsemium 187
— Alcoholic Extract of . . 157
— Tincture of 420
Gentian, Extract of . . . 158
— Infusion of, Compound . 208
— Root 187
— Tincture of, Compound . 421
Gentianæ Radix 187
Ginger 472
— *Essence of* 435
— Syrup of 403
— Tincture of 435
— — Strong 435
Glacial Acetic Acid 5
Glauber's Salt 373
Glycerine 188
— of Borax 190
— of Carbolic Acid 189
— of Gallic Acid 189
— of Starch 190
— of Subacetate of Lead . . 191
— — Ointment of 447

GLY

PAGE

Glycerine of Tannic Acid . . 189
— of Tragacanth 191
Glycerinum 188
— Acidi Carbolici 189
— — Gallici 189
— — Tannici 189
— Aluminis 190
— Amyli 190
— Boracis 190
— Plumbi Subacetatis . . 191
— Tragacanthæ 191
Glycyrrhizæ Radix 191
Goa Powder 109
*Gold, Perchloride of, Solution of 483
*— Fine 475
Gossypium 192
Granati Radicis Cortex . . 193
Granulated Sulphate of Iron 180
*— Tin 478
— Zinc 472
Green Hellebore, Root of . . 459
— — Tincture of 435
Gregory's Powder 339
Guaiaci Lignum 193
— Resina 194
Guaiacum Mixture 271
— Resin 194
— Tincture of, Ammoniated 421
— Wood 193
Guaranina 82
Gum Acacia 1
— — Mucilage of 277
Gutta Percha 194
— Solution of 245

HÆMATOXYLI Lignum . 195
Hard Soap 354
Heavy Calcined Magnesia . 261
— Carbonate of Magnesium . 263
— Magnesia 261
Hellebore, Green, Rhizome of 459
— —Tincture of 435
Hemidesmi Radix 195
Hemidesmus Root 195
— Syrup of 399
Hemlock, Extract of . . . 156
— Fruit 124
— Juice of 388
— Leaves 124

HYD

PAGE

Hemlock, Pill of, Compound 307
— Poultice 100
— Tincture of 417
Hemp, Indian 93
— — Extract of 151
— — Tincture of 411
Henbane and Colocynth, Pill of 307
— Extract of 159
— Juice of 388
— Leaves 203
— Tincture of 422
Hepar Sulphuris 319
Hepatic Aloes 39
Hips 347
— Confection of 121
Hirudo 196
Hoffmann's Anodyne . . . 377
Honey 267
— Borax 267
— Clarified 267
Hop 260
— Extract of 162
— Infusion of 209
— Tincture of 426
Hordeum Decorticatum . . 196
Horseradish Root 63
— Spirit of, Compound . . 380
Hydrargyri Ammonio-chloridum 202
— *Bichloridum* 198
— *Biniodidum* 196
— *Chloridum* 200
— Iodidum Rubrum . . . 196
— *Nitrico-oxidum* 198
— Oxidum Flavum 197
— — Rubrum 198
— Perchloridum 198
— Persulphas 199
— *Præcipitatum Album* . . 202
— Subchloridum 200
— *Sulphas* 199
Hydrargyrum 201
— Ammoniatum 202
— *Corrosivum Sublimatum*. 198
— cum Creta 202
Hydrate of Amyl 37
— Butyl-Chloral 82
— Calcium 86
— Chloral 107
— *Lime* 86
— *Potassium* 318

PAGE
Hydrobromic Acid, Diluted . 12
Hydrochlorate of Apomorphine 55
— Cocaine 116
— *Morphia* 274
— Morphine 274
— — Solution of 250
— Quinine 342
Hydrochloric Acid 13
— — Diluted 15
— Solution of Arsenic . . . 233
Hydrocyanic Acid, Diluted . 16
— — Inhalation of 457
*Hydrogen, Sulphuretted . . 478
Hydrous Butyl-Chloral . . 82
— *Chloral* 107
Hyoscyami Folia 203
Hypodermic Injection of Apomorphine 212
— — Ergotin 212
— — Morphine 212
Hypophosphite of Calcium . 86
— *Lime* 86
— Sodium 370
*Hyposulphite of Sodium . . 476
*— — Volumetric Solution of 490

ICELAND Moss 105
— — Decoction of 132
— *Lichen* 105
Indian Hemp 93
— — Extract of 151
— — Tincture of 411
*Indigo 476
*— Sulphate of, Solution of . 485
Infusion of Bearberry . . . 211
— Buchu 204
— Calumba 205
— Cascarilla 205
— Catechu 205
— Chamomile 204
— Chiretta 206
— Cinchona, Acid 206
— Cloves 205
— Cusparia 206
— Ergot 207
— Foxglove 207
— Gentian, Compound . . 208
— Jaborandi 208
— Hop 209

PAGE
Infusion of Kousso 207
— Linseed 209
— Matico 209
— Orange Peel 204
— — Compound 204
— Quassia 209
— Rhatany 208
— Rhubarb 210
— Roses, Acid 210
— Senega 210
— Senna 211
— Serpentary 211
— Valerian 211
Infusum Anthemidis . . . 204
— Aurantii 204
— — Compositum 204
— Buchu 204
— Calumbæ 205
— Caryophylli 205
— Cascarillæ 205
— Catechu. 205
— Chiratæ 206
— *Cinchonæ* 206
— — Acidum 206
— Cuspariæ 206
— Cusso 207
— Digitalis 207
— Ergotæ 207
— Gentianæ Compositum . 208
— Jaborandi 208
— Krameriæ 208
— Lini 209
— Lupuli 209
— Maticæ 209
— Quassiæ 209
— Rhei 210
— Rosæ Acidum 210
— Senegæ 210
— Sennæ 211
— Serpentariæ 211
— Uvæ Ursi 211
— Valerianæ . . . . 211.
Inhalation of Hydrocyanic Acid 457
— Chlorine 457
— Conia 457
— Creasote 458
— Fir-wool Oil 458
— Iodine 458
Injectio Apomorphinæ Hypodermica 212
— Ergotini Hypodermica. . 212

PAGE
Injectio Morphinæ Hypodermica 212
Iodide of Arsenic 64
— Arsenium 64
— Iron, Pill of 308
— — Syrup of 397
— Lead 315
— — Ointment of 451
— — Plaster 143
— Mercury, Red 196
— — — Ointment of . . . 448
— Potassium 328
— — Ointment of 452
— — and Soap, Liniment of 225
*— — Solution of 482
— Sodium 370
— Sulphur 391
— — Ointment of 454
Iodine 214
— Inhalation of 458
— Liniment of 225
— Ointment of 450
— Solution of 246
— Tincture of 422
*— Volumetric Solution of . 491
Iodoform 213
— Ointment of 450
— Suppositories 394
Iodum 214
Ipecacuanha 214
— Compound Powder of . . 337
— Lozenges 439
— and Morphia Lozenges . 440
— with Squill, Pill of . . . 309
— Wine of 463
Iron 181
— Acetate of, Solution of . 239
— — — — Strong 239
— — Tincture of 419
— Aromatic Mixture of . . 270
— Arseniate of 172
— and Aloes, Pill of . . . 305
— *and Ammonia, Citrate of* 174
— and Ammonium, Citrate of 174
— Carbonate of, Pill of . . 308
— — Saccharated 173
— *Chloroxide, Solution of* . 240
— Citrate of, and Quinine . 175
— — Wine of 462
— Compound Mixture of . . 271
— Dialysed, Solution of . . 240
— Iodide of, Pill of 308

PAGE
Iron, Iodide of, Syrup of . . 397
— Perchloride of, Solution of 241
— — — Strong 242
— — Tincture of 420
— Pernitrate of, Solution of . 243
— Peroxide of 177
— Persulphate of, Solution of 244
— Phosphate of 178
— — Syrup of 398
— Reduced 181
— — Lozenges of 439
— Sulphate of 179
— — Dried 180
— — Granulated 180
*— — Solution of 485
*— Sulphide of 478
— Tartarated 183
— Wine of 462
*Isinglass 476

JABORANDI 215
— Extract of 160
— Infusion of 208
— Tincture of 422
Jalap 216
— Extract of 160
— Powder of, Compound . . 338
— Resin of 216
— Tincture of 423
Jalapa 216
Jalapæ Resina 216
Jamaica Sarsaparilla . . . 355
Jasmine, Yellow 187
Juice of Belladonna . . . 388
— Broom 389
— Dandelion 389
— Hemlock 388
— Henbane 388
— Lemon 221
— Mulberry 273
Juniper, Oil of 286
— Spirit of 382

KAMALA 217
Kino 218
— Powder of, Compound . . 338
— Tincture of 423
Kousso 131
— Infusion of 207
Krameriæ Radix 218

PAGE
Lac 219
Lactic Acid 17
— — Diluted 18
Lactuca 219
Lamellæ Atropinæ 219
— Cocainæ 219
— Physostigminæ 220
Larch Bark 220
— Tincture of 424
Lard, Benzoated 32
— Prepared 33
Laricis Cortex 220
Laudanum 427
Lavender, Oil of. 287
— Spirit of 382
— Tincture of, Compound . 424
Laurocerasi Folia 220
Lead, Acetate of 313
— — Ointment of 451
— Carbonate of 314
— — Ointment of 451
— Iodide of 315
— — Ointment of 451
— — Plaster of 143
— Nitrate of 315
— and Opium, Pill of . . . 310
— Oxide of 316
— Plaster 142
— Subacetate of, Glycerine of 191
— — Ointment of 447
— — Solution of 250
— — — Diluted 251
— Suppositories, Compound 395
Leaves, Aconite 30
— Bearberry 456
— Belladonna 72
— Buchu 81
— Cherry Laurel 220
— Foxglove 136
— Hemlock 124
— Henbane 203
— Matico 266
Leech 196
Lemon, Oil of 287
— Juice 221
— Peel 221
— — Tincture of 425
Lemons, Syrup of 399
Lettuce 219
— Extract of 161
Light Calcined Magnesia . 260
— Carbonate of Magnesium . 262

PAGE
Light Magnesia 260
Lime 89
— *Carbonate of, Precipitated* 84
— Chlorinated 90
— — Solution of 237
— *Hydrate of* 86
— *Hypophosphite of* . . . 86
— Liniment of 223
— *Phosphate of* 87
— Saccharated, Solution of . 237
— *Slaked* 86
— Solution of 236
— *Sulphate of* 88
— Sulphurated 90
— *Water* 236
Limonis Cortex 221
— *Pericarpium* 221
— Succus 221
Lini Farina 221
— Semina 222
Liniment of Aconite . . . 222
— Ammonia 223
— Belladonna 223
— Camphor 223
— — Compound 224
— Chloroform 224
— Croton Oil 224
— Iodide of Potassium and
Soap 225
— Iodine 225
— Lime 223
— Mercury 225
— Mustard, Compound . . 226
— Opium 225
— Soap 226
— Turpentine 227
— — and Acetic Acid . . 227
Linimentum Aconiti . . . 222
— Ammoniæ 223
— Belladonnæ 223
— Calcis 223
— Camphoræ 223
— — Compositum 224
— *Cantharidis* 239
— Chloroformi 224
— Crotonis 224
— Hydrargyri 225
— Iodi 225
— Opii 225
— Potassii Iod. cum Sapone 225
— Saponis 226
— Sinapis Compositum . . 226

PAGE
Linimentum Terebinthinæ . 227
— — Aceticum 227
Linseed 222
— Infusion of 209
— Meal 221
— Oil 287
— Poultice 100
Liquefied Carbolic Acid . . 9
Liquid, Blistering 239
— Extract of Bael 149
— — Cascara Sagrada . . 152
— — Cinchona 153
— — Dandelion 170
— — Ergot 156
— — Liquorice 159
— — Male Fern 157
— — Opium 164
— — Pareira 166
— — Rhamnus Frangula . 168
— — Sarsaparilla 169
Liquor Acidi Chromici . . 227
— Ammoniæ 228
— — Fortior 228
— Ammonii Acetatis . . . 230
— — — Fortior 230
— — Citratis 231
— — — Fortior 231
— Antimonii Chloridi . . . 232
— Arsenicalis 233
— Arsenici Hydrochloricus . 233
— Arsenii et Hydrargyri Iodidi 234
— Atropinæ Sulphatis . . 235
— *Bismuthi* 235
— — et Ammonii Citratis . 235
— Calcii Chloridi 236
— Calcis 236
— — Chlorinatæ 237
— — Saccharatus 237
— Chlori 238
— Epispasticus 239
— Ferri Acetatis 239
— — — Fortior 239
— — Dialysatus 240
— — Perchloridi 241
— — — Fortior 242
— — Pernitratis 243
— — Persulphatis 244
— Gutta Percha 245
— *Hydrargyri Bichloridi* . 246
— — Nitratis Acidus . . . 245
— — Perchloridi 246

PAGE
Liquor Iodi 246
— Lithiæ Effervescens . . 246
— Magnesii Carbonatis . . 247
— — Citratis 248
— Morphinæ Acetatis . . . 248
— — Bimeconatis 249
— — Hydrochloratis . . . 250
— Plumbi Subacetatis . . 250
— — — Dilutus 251
— Potassæ 251
— — *Arsenitis* 233
— — Effervescens 252
— Potassii Permanganatis . 253
— *Sarsæ* 169
— Sodæ 253
— — Chlorinatæ 254
— — Effervescens 255
— Sodii Arseniatis 255
— — Ethylatis 256
— *Strychniæ* 256
— Strychninæ Hydrochlor. . 256
— Zinci Chloridi 257
Liquorice, Comp. Powder of . 337
— Extract of 158
— — Liquid 159
— Root 191
List of Substances added in this Edition xxiii
— Substances with altered Composition in this Edit. xxvii
— Substances with altered Names in this Edition xxv
— Substances omitted in this Edition xxiv
Litharge 316
Lithia, Carbonate of . . . 257
— *Citrate of* 258
— Solution of, Effervescing . 246
— *Water* 246
Lithiæ Carbonas 257
Lithiæ Citras 258
Lithii Carbonas 257
— Citras 258
Lithium, Citrate of 258
*Litmus 476
*— Paper 476
*— Solution of . . . 483, 496
Lobelia 259
— Tincture of 425
— — Ethereal 426
Logwood 195
— Decoction of 133

PAGE
Logwood, Extract of 159
Lotio Hydrargyri Flava . . . 259
— — Nigra 259
Lotion, Black Mercurial . . . 259
— Yellow Mercurial 259
Lozenges, Benzoic Acid . . . 437
— Bicarbonate of Sodium . 442
— Bismuth 438
— Catechu 438
— Chlorate of Potassium . 441
— Ipecacuanha 439
— Morphine 440
— — and Ipecacuanha . . 440
— Opium 441
— Reduced Iron 439
— Santonin 442
— Tannic Acid 437
Lunar Caustic 61
Lupulin 259
Lupulinic Glands 259
Lupulinum 259
Lupulus 260

*MAGNESIA, Ammonio-sulphate of, Solution of 480
— Light 260
— — *Calcined* 260
— — *Carbonate of* 262
— Heavy 261
— — *Calcined* 261
— — *Carbonate of* 263
— *Fluid* 247
— Ponderosa 261
— *Sulphate of* 264
Magnesiæ Carbonas Levis . 262
— *Sulphas* 264
Magnesii Carbonas Levis . 262
— — Ponderosa 263
— Sulphas 264
Magnesium, Carbonate of, Heavy 263
— — Light 262
— — Solution of 247
— Citrate of, Solution of . . 248
— Oxide of 260, 261
— Sulphate of 264
— — Enema of 145
Male Fern 184
— — Liquid Extract of . . 157
Manganese, Black Oxide of . 264

PAGE
Manganesii Oxidum Nigrum 264
Manila Elemi 138
Manna 265
Marble, White 265
Marmor Album 265
Mastich 266
Mastiche 266
Maticæ Folia 266
Matico, Infusion of . . . 209
— Leaves 266
Meal, Linseed 221
*Measures and Weights of the British Pharmacopœia 498
*— — of the Metric System 499
Meconic Acid 18
Mel 267
— Boracis 267
— Depuratum 267
Menthol 268
Mercurial Lotion, Black . . 259
— — Yellow 259
— Pill 308
— Plaster 141
— Suppositories 393
Mercuric-Ammonium, Chloride of 202
Mercuric Chloride 198
— — *Solution of* 246
— *Iodide* 196
— *Nitrate, Solution of* . . 245
— *Oxide, Red* 198
— — *Yellow* 197
— *Sulphate* 199
Mercurous Chloride . . . 200
Mercury 201
— Ammoniated 202
— with Chalk 202
— Iodide, Red 196
— — Ointment of 448
— Liniment 225
— Nitrate of, Solution of, Acid 245
— — Ointment of 449
— — — Diluted 449
— Ointment of 447
— — Ammoniated 448
— — Compound 448
— Oleate of 281
— Oxide of, Red 198
— — — Ointment of . . . 449
— Perchloride of 198

PAGE
Mercury, Perchloride of, Solution of 246
— Persulphate of 199
— Subchloride of 200
— — Ointment of 450
— — Pill of, Compound . . 309
— *Sulphate of* 199
— Yellow Oxide of 197
Metallic Silver, Pure . . . 63
*Metric System, Weights and Measures of 499
Mezereon Bark 268
— — Ethereal Extract of . 162
Mezerei Cortex 268
Mica Panis 269
Milk 219
— Sugar of 350
Mistura Ammoniaci . . . 269
— Amygdalæ 269
— *Camphoræ*. 57
— Creasoti 269
— Cretæ 270
— Ferri Aromatica 270
— — Composita 271
— Guaiaci 271
— Scammonii 272
— Sennæ Composita . . . 272
— Spiritus Vini Gallici . . 272
Mitigated Caustic 60
Mixture, Ammoniacum . . 269
— Almond 269
— Chalk 270
— Creasote 269
— French Brandy 272
— Guaiacum 271
— Iron, Aromatic 270
— — Compound 271
— Scammony 272
— Senna, Compound . . . 272
*Molybdate of Ammonium . 476
Mori Succus 273
Morphia, Acetate of . . . 273
Morphia, Hydrochlorate of . 274
Morphiæ Murias 274
Morphinæ Acetas 273
— Hydrochloras 274
— Sulphas 276
Morphine, Acetate of . . . 273
— — Solution of 248
— Bimeconate of, Solution of 249
— Hydrochlorate of . . . 274
— — Solution of 250
— Hypodermic Injection of . 212

PAGE
Morphine and Ipecacuanha Lozenges 440
— Lozenges 440
— Sulphate of 276
— Suppositories 394
— — with Soap 395
Moschus 277
Moss, Iceland 105
— — Decoction of 132
Mucilage of Gum Acacia . . 277
— Starch 278
— Tragacanth 278
Mucilago Acaciæ 277
— Amyli 278
— Tragacanthæ 278
Mulberries, Syrup of . . . 399
Mulberry Juice 273
Muriatic Acid 13
Musk 277
Mustard 362
— Black, Seeds 363
— Liniment of, Compound . 226
— Oil of 293
— Paper 106
— Poultice 100
— White, Seeds 362
Myristica 279
Myristicæ Adeps 289
Myrrh 279
— and Aloes, Pill of . . . 305
— Tincture of 426
Myrrha 279

NATIVE Carbonate of Calcium 265
— — *Zinc* 84
— *Sulphide of Antimony* . 52
Nectandræ, Cortex 280
Nessler's Reagent 484
Nitrate of Ammonium . . 45
— Copper 129
— Lead 315
— Mercury, Solution of . . 245
— — Ointment of 449
— — — Diluted 449
— Pilocarpine 304
— *Potash* 329
— Potassium 329
— Silver 61
— Silver and Potassium . . 60

PAGE
*Nitrate of Silver, Vol. Sol. of 492
— — Toughened 62
— *Soda* 371
— Sodium 371
Nitric Acid 18
— — Diluted 19
Nitrite of Amyl 47
Nitroglycerine, Tablets of . 404
Nitro-hydrochloric Acid, Diluted 20
Nitrous Ether, Spirit of . . 377
Nutmeg 279
— Oil of, Expressed . . . 289
— — Volatile 289
— Spirit of 382
Nux Vomica 280
— — Extract of 163
— — Tincture of 427

OAK BARK 341
— — Decoction of 134
Oil, Almond 282
— Anise 283
— Cajuput 283
— Caraway 284
— Castor 291
— Chamomile 283
— Cinnamon 284
— Cloves 284
— Cod-liver 288
— Copaiva 285
— Coriander 285
— Croton 285
— — Liniment of 224
— Cubebs 286
— Dill 282
— Eucalyptus 286
— Fir-wool 291
— — Inhalation of . . . 458
— *Fousel* 37
— Juniper 286
— Lavender 287
— Lemon 287
— Linseed 287
— Mustard 293
— Nutmeg, Expressed . . 289
— — Volatile 289
— Olive 290
— Peppermint 288
— Phosphorated 290
— Pimento 291

PAGE
Oil, Rosemary 292
— Rue 292
— Savin 293
— Sandal Wood 293
— Spearmint 288
— Theobroma 294
— Turpentine 294
Ointment of Acetate of Lead 451
— Aconitine 444
— Atropine 444
— Belladonna 444
— *Boracic Acid* 443
— Boric Acid 443
— Calamine 445
— Cantharides 445
— Carbolic Acid 443
— Carbonate of Lead . . . 451
— Chrysarobin 446
— Creasote 446
— Elemi 446
— Eucalyptus 446
— Galls 447
— — and Opium 447
— Glycerine of Subacetate of Lead 447
— Iodide of Lead 451
— — Potassium 452
— — Sulphur 454
— Iodine 450
— Iodoform 450
— Mercury 447
— — Ammoniated 448
— — Compound 448
— Nitrate of Mercury . . . 449
— — — Diluted 449
— Oleate of Zinc 455
— Red Iodide of Mercury . 448
— — Oxide of Mercury . . 449
— Resin 452
— Salicylic Acid 443
— Savin 453
— Simple 453
— Spermaceti 445
— Stavesacre 453
— Subchloride of Mercury . 450
— Sulphur 454
— Sulphurated Potash . . 452
— Tar 451
— Tartarated Antimony . . 444
— Turpentine 454
— Veratrine 455
— *White Precipitate* . . . 448

PAGE
Ointment of Zinc 456
Oleate of Mercury 281
— Zinc 281
— — Ointment of 455
Oleatum Hydrargyri 281
— Zinci 281
Oleic Acid 21
Oleo-resina Cubebæ 282
Oleo-resin of Cubebs 282
Oleum Amygdalæ 282
— Anethi 282
— Anisi 283
— Anthemidis 283
— Cajuputi 283
— Carui 284
— Caryophylli 284
— Cinnamomi 284
— Copaibæ 285
— Coriandri 285
— Crotonis 285
— Cubebæ 286
— Eucalypti 286
— Juniperi 286
— Lavandulæ 287
— Limonis 287
— Lini 287
— Menthæ Piperitæ . . . 288
— — Viridis 288
— Morrhuæ 288
— Myristicæ 289
— — Expressum 289
— Olivæ 290
— Phosphoratum 290
— Pimentæ 291
— Pini Sylvestris 291
— Ricini 291
— Rosmarini 292
— Rutæ 292
— Sabinæ 293
— Santali 293
— — *Flavi* 293
— Sinapis 293
— Terebinthinæ 294
— Theobromatis 294
Olive Oil 290
Opium 295
— Confection of 121
— and Chalk, Aromatic Powder of 336
— Enema of 145
— Extract of 164
— — Liquid 164

PAGE
Opium and Galls, Ointment of 447
— and Lead, Pill of . . . 310
— Liniment of 225
— Lozenges 441
— Plaster 142
— Powder of, Compound . 338
— Tincture of 427
— — Ammoniated 428
— Wine of 463
Orange, Bitter 68
— Flower, Syrup of . . . 397
— — Water 56
— Peel, Bitter 67
— — Infusion of 204
— — Compound Infusion of 204
— — Syrup of 396
— — Tincture of 408
— — — Fresh 409
— Wine 461
Os Ustum 298
Ovi Albumen 298
— Vitellus 298
*Oxalate of Ammonium . . 476
*— — Solution of 483
— Cerium 103
*Oxalic Acid of Commerce . 476
*— — Volumetric Solution of 493
Ox Bile, Purified 171
Oxide of Antimony 51
— Bismuth 77
— *Ethyl* 36
— Lead 316
— *Magnesium* . . . 260, 261
— Manganese, Black . . . 264
— Mercury, Red 198
— — — Ointment of . . . 449
— — Yellow 197
— Silver 61
— Zinc 468
Oxycarbonate of Bismuth . 74
Oxymel 298
— Scillæ 299
— of Squill 299
Oxynitrate of Bismuth . . 77
Oxytartrate of Antimony and Potassium 54

PAPAVERIS Capsulæ . . 299
Paper, Blistering 105
*— Blue Litmus 476
— Mustard 106

PAGE
*Paper, Red Litmus 476
*— Turmeric 478
Paraffin 299
— Hard 299
— Soft 300
— *Wax* 299
Paraffinum Durum 299
— Molle 300
Paregoric; Paregoric Elixir 411
Pareira, Decoction of . . . 134
— Extract of 165
— — Liquid 166
— Root 301
Pareiræ Radix 301
Pearl Barley 196
Peel, Bitter Orange . . . 67
— Lemon 221
— — Tincture of 425
— Orange, Infusion of . . 204
— — — Compound . . . 204
— — Syrup of 396
— — Tincture of 408
— — — Fresh 409
Pellitory Root 340
— Tincture of 428
Pepper, Black 312
— Confection of 121
Peppermint, Essence of . . 147
— Oil of 288
— Spirit of 382
— Water 59
Pepsin 301
*Perchloride of Gold, Solution of 483
— Iron, Solution of . . . 241
— — — Strong 242
— — Tincture of 420
— Mercury 198
— — Solution of 246
*— Platinum, Solution of . 484
Permanganate of Potash . . 330
— Potassium 330
— — Solution of 253
Pernitrate of Iron, Solution of 243
Peroxide of Iron 177
Persulphate of Iron, Solution of 244
— Mercury 199
Peru, Balsam of 68
Petals of the Cabbage Rose . 348
— Red Poppy 347

PAGE
Petals of the Red Rose . . 348
Petrolatum 300
Pétroléine 300
**Petroleum Ether* 477
*— Spirit 477
Phenic Acid 8
Phenol 8
*Phenol-Phthalein 477
*— Tincture of . . . 487, 496
Phosphate of Ammonium . 46
— Calcium 87
— Iron 178
— — Syrup of 398
— *Lime*. 87
— *Soda*. 372
— Sodium 372
*— — Solution of 484
Phosphorated Oil 290
Phosphoric Acid, Concent. . 21
— — Diluted 23
Phosphorus 302
— Pill 309
Physostigmina 303
Physostigmine 303
— Discs of 220
Physostigmatis Faba . . . 303
— Semen 303
Pill of Aloes and Asafœtida . 305
— Aloes and Iron 305
— — Myrrh 305
— Asafœtida, Compound . . 306
— Barbadoes Aloes. . . . 304
— Carbonate of Iron . . . 308
— Colocynth, Compound. . 307
— — and Hyoscyamus . . 307
— Gamboge, Compound . . 306
— Hemlock, Compound . . 307
— Iodide of Iron 308
— Ipecacuanha with Squill . 309
— Lead and Opium . . . 310
— Mercurial 308
— Phosphorus 309
— Rhubarb, Compound . . 310
— Scammony, Compound . 311
— Soap, Compound . . . 311
— Socotrine Aloes 306
— Squill, Compound . . . 311
— Subchloride of Mercury, Compound 309
Pilocarpi Foliola 215
Pilocarpinæ Nitras 304
Pilocarpine, Nitrate of . . 304

PAGE
Pilula Aloes et Asafœtidæ . 305
— — Barbadensis 304
— — et Ferri 305
— — et Myrrhæ 305
— — Socotrinæ 306
— Asafœtidæ Composita . . 306
— *Calomelanos Composita* . 309
— Cambogiæ Composita . . 306
— Colocynthidis Composita . 307
— — et Hyoscyami . . . 307
— Conii Composita . . . 307
— Ferri Carbonatis . . . 308
— — Iodidi 308
— *Galbani Composita* . . 306
— Hydrargyri 308
— — Subchloridi Composita 309
— Ipecacuanhæ cum Scilla . 309
— *Opii* 311
— Phosphori 309
— Plumbi cum Opio . . . 310
— Rhei Composita 310
— Saponis Composita . . . 311
— Scammonii Composita . 311
— Scillæ Composita . . . 311
Pimento 312
— Oil of 291
— Water 60
Piper Nigrum 312
Pitch, Burgundy 313
— Plaster 142
Pix Burgundica 313
— Liquida 313
Plaster, Ammoniac. & Mercury 139
— Belladonna 139
— Brown Soap 144
— Cantharides 140
— Chalybeate 141
— Galbanum 141
— Iodide of Lead 143
— Lead 142
— Mercurial 141
— Opium 142
— Pitch 142
— Resin 143
— Soap 143
— *Warm* 140
— Warming 140
*Platinum Black 477
*— Foil 477
*— Perchloride of, Solution of. 484
Plumbi Acetas 313
— Carbonas 314

PAGE
Plumbi Iodidum 315
— Nitras 315
— Oxidum 316
Podophyllum, Tincture of . 428
Podophylli Radix 317
— Resina 317
— Rhizoma 317
Podophyllum, Resin of . . 317
Pomegranate Root Bark . . 193
— — Decoction of 133
Poppies, Extract of. . . . 165
— Syrup of 400
Poppy, Red, Petals of . . . 347
— — Syrup of 401
— Decoction of 134
— Capsules 299
Potash, Acetate of 320
— *Acid Tartrate of* . . . 333
— *Alum* 40
— *Bicarbonate of* 321
— *Bichromate of* 322
— *Bitartrate of* 333
— *Carbonate of* 323
— Caustic 318
— *Chlorate of* 324
— *Citrate of* 325
— *Hydrate of* 318
— *Nitrate of* 329
— *Permanganate of* . . . 330
*— *Prussiate of, Red* . . . 475
— — *Yellow* 327
— Solution of 251
— — Effervescing 252
— *Sulphate of* 331
— Sulphurated 319
— — Ointment of 452
— *Tartrate of* 332
— — *Acid* 333
— *Water* 252
Potassa 318
— Caustica 318
— Sulphurata 319
Potassæ Acetas 320
— *Bicarbonas* 321
— *Bichromas* 322
— *Bitartras* 333
— *Carbonas* 323
— *Chloras* 324
— *Citras* 325
— *Prussias Flava* 327
— *Nitras* 329
— *Permanganas* 330

PAGE
Potassæ Sulphas 331
— *Tartras* 332
— — *Acida* 333
Potassii Acetas 320
— Bicarbonas 321
— Bichromas 322
— Bromidum 322
— Carbonas 323
— Chloras 324
— Citras 325
— Cyanidum 326
— Ferrocyanidum 327
— Iodidum 328
— Nitras 329
— Permanganas 330
— Sulphas 331
— *Sulphuretum* 319
— Tartras 332
— — Acida 333
Potassium, Acetate of . . . 320
*— — Solution of 479
— *Acid Carbonate of* . . . 321
— Acid Tartrate of . . . 333
— *and Sodium, Tartrate of*. 364
— *Anhydrochromate of* . . 322
— Bicarbonate of 321
— Bichromate of 322
*— — Volumetric Solution of 489
— Bromide of 322
— Carbonate of 323
— Chlorate of 324
— — Lozenges 441
— Citrate of 325
— Cyanide of 326
*— Ferricyanide of 475
— Ferrocyanide of 327
— *Hydrate of* 318
— Iodide of 328
— — Ointment of 452
— — and Soap, Liniment of 225
*— — Solution of 482
— Nitrate of 329
— Permanganate of . . . 330
— *Red Chromate of* . . . 322
— Sulphate of 331
— Tartrate of 332
Poultice, Charcoal 99
— Chlorine 101
— Hemlock 100
— Linseed 100
— Mustard 100
— Yeast 100

PAGE
Powder of Almonds, Compound 334
— Antimonial 335
— *Araroba* 109
— Catechu, Compound . . 335
— Cinnamon, Compound . 335
— Chalk, Aromatic 336
— — and Opium, Aromatic. 336
— Elaterin, Compound . . 337
— *Goa* 109
— *Gregory's* 339
— Ipecacuanha, Compound . 337
— Jalap, Compound . . . 338
— Kino, Compound . . . 338
— Liquorice, Compound . . 337
— Opium, Compound . . . 338
— Rhubarb, Compound . . 339
— Scammony, Compound . 339
— Tragacanth, Compound . 340
Precipitate, White, Ointment of 448
Precipitated Carbonate of Lime 84
— Sulphur 389
Prepared Calamine 84
— Chalk 127
— Lard 33
— Storax 387
— Suet 362
Proof Spirit 384
Prune 333
Prunum 333
*_Prussiate of Potash, Red_ . . 475
— — *Yellow* 327
Pterocarpi Lignum 334
Pulp, Cassia 99
— Colocynth 120
Pulvis Amygdalæ Compositus 334
— Antimonialis 335
— *Aromaticus* 335
— Catechu Compositus . . 335
— Cinnamomi Compositus . 335
— Cretæ Aromaticus . . . 336
— — — cum Opio 336
— Elaterini Compositus . . 337
— Glycyrrhizæ Compositus . 337
— Ipecacuanhæ Compositus 337
— Jalapæ Compositus . . . 338
— Kino Compositus . . . 338
— Opii Compositus . . . 338
— Rhei Compositus . . . 339
— Scammonii Compositus . 339

PAGE
Pulvis Tragacanthæ Compositus . . . 340
Pure Ether . . . 36
— *Metallic Silver* . . . 63
Purified Animal Charcoal . 95
— Bismuth . . . 79
— Black Antimony . . . 52
— Ox Bile . . . 171
Pyrethri Radix . . . 340
Pyroborate of Sodium . . . 80
Pyroxylin . . . 340

QUASSIA, Extract of . . 167
— Infusion of . . . 209
— Tincture of . . . 429
— Wood . . . 341
Quassiæ Lignum . . . 341
Quercûs Cortex . . . 341
Quinia, Sulphate of . . . 343
— *Hydrochlorate of* . . . 342
Quiniæ Sulphas . . . 343
— *Hydrochloras* . . . 342
Quininæ Hydrochloras . . 342
— Sulphas . . . 343
Quinine, Ammoniated Tincture of . . . 429
— Hydrochlorate of . . . 342
— Sulphate of . . . 343
— Tincture of . . . 429
— Wine of . . . 463

RAISINS . . . 455
Rectified Spirit . . . 383
Red Chromate of Potassium . 322
— Iodide of Mercury . . . 196
— — — Ointment of . . . 448
*— Litmus Paper . . . 476
— Oxide of Mercury . . . 198
— — — Ointment of . . . 449
— Poppy Petals . . . 347
— — Syrup of . . . 401
— Rose Petals . . . 348
— Roses, Syrup of . . . 401
*— *Prussiate of Potash* . . 475
— Sandal Wood . . . 334
— *Sanders Wood* . . . 334
Reduced Iron . . . 181
— — Lozenges . . . 439
Refined Silver . . . 63
— Sugar . . . 350

PAGE
Resin . . . 345
— Guaiacum . . . 194
— Jalap . . . 216
— Ointment . . . 452
— Plaster . . . 143
— Podophyllum . . . 317
— Scammony . . . 357
Resina . . . 345
Rhamni Frangulæ Cortex . 345
— Purshiani Cortex . . . 346
Rhamnus Frangula, Extract of 167
— — — Liquid . . . 168
Rhatany, Extract of . . . 161
— Infusion of . . . 208
— Root . . . 218
— Tincture of . . . 423
Rhei Radix . . . 346
Rhizome, Arnica . . . 64
— Green Hellebore . . . 459
— Serpentary . . . 361
— Valerian . . . 456
Rhœados Petala . . . 347
Rhubarb, Extract of . . . 168
— Infusion of . . . 210
— Pill, Compound . . . 310
— Powder of, Compound . 339
— Root . . . 346
— Syrup of . . . 400
— Tincture of . . . 430
— Wine of . . . 464
Rochelle Salt . . . 364
Root, Aconite . . . 30
— *Arnica* . . . 64
— Belladonna . . . 72
— Calumba . . . 88
— Dandelion . . . 404
— Gentian . . . 187
— Hemidesmus . . . 195
— Horseradish . . . 63
— Liquorice . . . 191
— Pareira . . . 301
— Pellitory . . . 340
— Pomegranate Bark . . . 193
— Rhatany . . . 218
— Rhubarb . . . 346
— Sassafras . . . 356
— Scammony . . . 356
— Senega . . . 359
— Sumbul . . . 392
Rosæ Caninæ Fructus . . 347
— Centifoliæ Petala . . . 348
— Gallicæ Petala . . . 348

PAGE
Rose, Cabbage, Petals of . . . 348
— Dog, Fruit of 347
— Red, Petals of 348
— Water 60
Roses, Confection of . . . 121
— Infusion of, Acid . . . 210
— Red, Syrup of 401
Rosemary, Oil of 292
— Spirit of 383
Rue, Oil of 292

SABADILLA 349
Sabinæ Cacumina 349
Saccharated Carbonate of Iron 173
— Solution of Lime . . . 237
Saccharum Lactis 350
— Purificatum 350
Sacred Bark 346
Saffron 127
— Tincture of 418
Sal Ammoniac 44
Salicin 351
Salicinum 351
Salicylate of Sodium . . . 372
Salicylic Acid 23
— — Ointment of 443
Salt, Common 369
— *Epsom* 264
— *Rochelle* 364
Sal Volatile 379
Sambuci Flores 351
Sandal Wood, Red 334
— — Oil of 293
Sanders Wood, Red . . . 334
Santonica 352
Santonin 352
— Lozenges 442
Santoninum 352
Sapo Animalis 354
— Durus 354
— Mollis 355
Sarsaparilla, Decoction of . 135
— — Compound 135
— Extract of, Liquid . . . 169
— Jamaica 355
Sarsæ Radix 355
Sassafras Radix 356
— Root 356
Savin, Oil of 293
— Ointment of 453

PAGE
Savin, Tincture of 430
— Tops 349
Scammoniæ Radix 356
— Resina 357
Scammonium 358
Scammony 358
— Confection of 122
— Mixture 272
— Pill, Compound 311
— Powder of, Compound . . 339
— Resin of 357
— Root 356
Scilla 358
Scoparii Cacumina 359
Seeds, Colchicum 119
— — Tincture of 417
— Mustard, Black 363
— — White 362
— Stramonium 385
— Stavesacre 385
Senega, Infusion of 210
— Root 359
— Tincture of 431
Senegæ Radix 359
Senna Alexandrina 360
— Alexandrian 360
— Confection of 122
— East Indian 361
— Indica 361
— Infusion of 211
— Mixture of, Compound . 272
— Syrup of 402
— Tincture of 432
— *Tinnivelly* 361
Serpentariæ Rhizome . . . 361
— *Radix* 361
Serpentary, Infusion of . . 211
— Rhizome 361
— Tincture of 432
Sevum Præparatum . . . 362
Sherry 464
Silver and Potassium, Nitrate 60
*— Ammonio-nitrate of, Solution of 480
— Nitrate of 61
— — Toughened 62
*— — Volumetric Solution of 492
— Oxide of 62
— *Pure Metallic* 63
— Refined 63
Simple Ointment 453
Sinapis 362

PAGE
Sinapis Albæ Semina . . . 362
— Nigræ Semina 363
Slaked Lime 86
Soap, Castile 354
— *Cerate Plaster* 144
— Compound Pill of . . . 311
— Curd 354
— Hard 354
— and Iodide of Potassium, Liniment of 225
— Liniment of 226
— Morphine Suppositor. with 395
— Plaster 143
— Soft 355
— Tannic Acid Suppositories with 393
Socotrine Aloes 39
— — Extract of 148
— — Pill of 306
Soda, *Arseniate of* 365
— *Bicarbonate of* 366
— *Carbonate of* 367
— Caustic 363
— Caustica 363
— Chlorinated, Solution of . 254
— *Citro-tartrate of, Efferv.* . 369
— *Hydrate of* 363
— *Hypophosphite of* . . . 370
— *Nitrate of* 371
— *Phosphate of* 372
— *Salicylate of* 372
— Solution of 253
— — Effervescing 255
— *Sulphate of* 373
— *Sulphite of* 373
— Tartarata 364
— Tartarated 364
— *Valerianate of* 375
*— Volumetric Solution of . 494
— *Water* 255
Sodæ Arsenias 365
— *Biboras* 80
— *Bicarbonas* 366
— *Carbonas* 367
— — *Exsiccata* 367
— *Citro-tartras Effervescens* 369
— *et Potassæ Tartras* . . . 364
— *Hydras* 363
— *Hypophosphis* 370
— *Nitras* 371
— *Phosphas* 372
— *Potassio-tartras* 364

PAGE
Sodæ Salicylas 372
— *Sulphas* 373
— *Sulphis* 373
— *Valerianas* 375
Sodii Arsenias 365
— Bicarbonas 366
— Bromidum 367
— Carbonas 367
— — Exsiccata 368
— Chloridum 369
— Citro-tartras Effervescens 369
— Hypophosphis 370
— Iodidum 370
— Nitras 371
— Phosphas 372
— Salicylas 372
— Sulphas 373
— Sulphis 373
— Sulphocarbolas 374
— Valerianas 375
Sodium 375
*— Acetate of 475
— Bicarbonate of 366
— — Lozenges 442
— Bromide of 367
— Carbonate of 367
— — Dried 368
— Chloride of 369
— Citro-tartrate of, Efferv. . 369
— *Hydrate of* 363
— Hypophosphite of . . . 370
*— Hyposulphite of 476
*— — Volumet. Solution . . 490
— Iodide of 370
— Nitrate of 371
— Phosphate of 372
— Salicylate of 372
— Sulphate of 373
— Sulphite of 373
— Sulphocarbolate of . . . 374
*— *Thiosulphate of* 476
— Valerianate of 375
Soft Soap 355
Sol. of Acetate of Ammonium 230
— — — Strong 230
*— — Copper 479
— — Iron 239
— — — Strong 239
— — Morphine 248
*— — Potassium 479
*— — Sodium 479
*— Albumen 480

PAGE
Solution of Ammonia . . . 228
— — Strong 228
*— Ammonio-nitrate of Silver 480
*— — -sulphate of Copper . 480
*— — -sulphate of Magnesium 480
— Arseniate of Sodium . . 255
— Arsenic, Hydrochloric . . 233
— Arsenical 233
*— Bichromate of Potassium, Volumetric 489
— Bimeconate of Morphine . 249
*— Boric Acid 481
*— Bromine 481
*— Carbonate of Ammonium 481
— — Magnesium 247
*— Chloride of Ammonium . 481
— — Antimony 232
*— — Barium 482
— — Calcium 236
— — Zinc 257
— Chlorinated Soda . . . 254
— Chlorine 238
— *Chloroxide of Iron* . . . 240
— Chromic Acid 227
— *Citrate of Ammonia* . . 231
— — Ammonium 231
— — — Strong 231
— — Bismuth and Ammon. . 235
— — of Magnesium . . . 248
— *Donovan's* 234
— Dialysed Iron 240
— Ethylate of Sodium . . 256
— *Ferric Acetate* 239
— — *Chloride* 241
*— Ferricyanide of Potassium 482
*— Ferrocyanide of Potassium 482
— *Fowler's* 233
— Gutta Percha 245
— Hydrochlorate of Morphine 250
— — Strychnine 256
*— Hyposulphite of Sodium, Volumetric 490
*— Iodide of Potassium . . 428
— — Arsenium and Mercury 234
— Iodine 246
*— — Volumetric 491
*— Isinglass 482
— Lime 236
— — Chlorinated 237
— — Saccharated 237

PAGE
Solution of Lithia, Effervescing 246
*— of Litmus 483, 496
— *Mercuric Chloride* . . . 246
— — *Nitrate, Acid* . . . 245
— Nitrate of Mercury, Acid . 245
*— — Silver, Volumetric . . 492
*— Oxalate of Ammonium . 483
*— Oxalic Acid, Volumetric . 493
*— Perchloride of Gold . . 483
— — of Mercury 246
*— — Platinum 484
— — Iron 241
— — — Strong 242
— Permanganate of Potassium 253
— Pernitrate of Iron . . . 243
— Persulphate of Iron . . 244
*— Phosphate of Sodium . . 484
— Potash 251
— — Effervescing 252
— Soda 253
— — Effervescing 255
*— — Volumetric 494
*— Stannous Chloride . . . 485
— Subacetate of Lead . . 250
— — — Diluted 251
— Sulphate of Atropine . . 235
*— — Calcium 486
*— — Indigo 485
*— — Iron 485
*— Sulphydrate of Ammonium 486
*— Tartaric Acid 486
*— Yellow Chromate of Potassium 486
*Solutions, Test 479
*— — for Volumetric Estimations 487
Spearmint, Oil of 288
— Water 59
Spermaceti 104
— Ointment of 445
Spirit of Ammonia, Aromatic 379
— — Fetid 380
— Cajuput 380
— Camphor 381
— Chloroform 381
— Cinnamon 381
— Ether 377
— — Compound 377
— — Horseradish, Compound 380

PAGE
Spirit of Juniper 382
— Lavender 382
— Nitrous Ether 377
— Nutmeg 382
— Peppermint 382
— Proof 384
— Rectified 383
— Rosemary 383
Spiritus Ætheris 377
— — Compositus 377
— — *Nitrici* 377
— — Nitrosi 377
— Ammoniæ Aromaticus . 379
— — *Compositus* 379
— — Fœtidus 380
— Armoraciæ Compositus . 380
— Cajuputi 380
— Camphoræ 381
— Chloroformi 381
— Cinnamomi 381
— Juniperi 382
— Lavandulæ 382
— Menthæ Piperitæ . . . 382
— Myristicæ 382
— Rectificatus 383
— Rosmarini 383
— Tenuior 384
— Vini Gallici 385
Squill 358
— and Ipecacuanha, Pill of 309
— Oxymel of 299
— Pill, Compound 311
— Syrup of 402
— Tincture of 431
— Vinegar of 3
Squirting Cucumber Fruit . 137
Staphisagriæ Semina . . . 385
Star-Anise Fruit 50
Starch 48
— Glycerine of 190
— Mucilage of 278
*Stannous Chloride, Solution of 485
Stavesacre Seeds 385
— Ointment of 453
Storax, Prepared 387
Stramonii Semina 385
Stramonium, Extract of . . 169
— Seeds 385
— Tincture of 433
Strong Solution of Ammonia 228

PAGE
Strong Solution of Perchloride of Iron 241
— Tincture of Ginger . . . 435
Strychnia 386
Strychnina 386
Strychnine 386
Storax, Prepared 387
Styrax Præparatus 387
*Subacetate of Copper of Commerce 477
— Lead, Glycerine of . . . 191
— — Ointment of 447
— — Solution of 250
— — — Dilute 251
Subchloride of Mercury . . 200
— — Ointment of 450
— — Pill of, Compound . . 309
Sublimate, Corrosive . . . 198
Sublimed Sulphur 390
Subnitrate of Bismuth . . 77
Substances added in this Edition, List of xxiii
— with altered Composition in this Edition, List of .xxvii
— with altered Names in this Edition, List of . xxv
— omitted in this Edition, List of. xxiv
Succus Belladonnæ 388
— Conii 388
— Hyoscyami 388
— Limonis 221
— Mori 273
— Scoparii 389
— Taraxaci 389
Sucrose 350
Suet, Prepared 362
Sugar of Milk 350
— Refined 350
Sulphate of Aluminium and Potassium 40
— — *Ammonium* 40
— *of Atropia* 67
— Atropine 67
— — Solution of 235
— Beberine 70
*— Calcium 486
— Cinchonidine 113
— Cinchonine 114
— Copper 129
*— — Anhydrous 477
*— Indigo, Solution of . . . 485

PAGE

Sulphate of Iron 179
— — Dried 180
— — Granulated 180
*— — Solution of 485
— *Lime* 88
—Magnesium 264
— — Enema of 145
— *Mercury* 199
— Morphine 276
— *Potash* 331
— Potassium 331
— Quinine 313
— *Soda* 373
— Sodium 373
— Zinc 469
Sulphide of Antimony, Native 52
— *of Calcium* 90
*— of Iron 478
Sulphite of Sodium . . . 373
*Sulphydrate of Ammonium, Solution of 486
Sulphocarbolate of Sodium . 374
— Zinc 470
Sulphur, Confection of . . 123
— Iodide of 391
— — Ointment of 454
— Ointment of 454
— Precipitated 389
— Præcipitatum 389
— Sublimed 390
— Sublimatum 390
Sulphurated Antimony . . 53
— Lime 90
— Potash 319
— — Ointment of 452
*Sulphuretted Hydrogen . . 478
Sulphuric Acid 24
— — Aromatic 25
— — Diluted 26
— *Ether* 34
Sulphuris Iodidum 391
Sulphurous Acid 27
Sumbul Radix 392
— Root 392
— Tincture of 433
Suppositoria Acidi Carbolici cum Sapone 392
— — Tannici 393
— — — cum Sapone . . . 393
— Hydrargyri 393
— Iodoformi 394
— Morphinæ 394

PAGE

Suppositoria Morphinæ cum Sapone 395
— Plumbi Composita . . . 395
Suppositories, Carbolic Acid . 392
— Lead, Compound . . . 395
— Iodoform 394
— Mercurial 393
— Morphine 394
— Tannic Acid 393
— with Soap, Morphine . . 395
— — Tannic Acid 393
Sweet Almond 47
*Symbols and Atomic Weights 497
Syrup 396
— of Chloral 397
— Ginger 403
— Hemidesmus 399
— Iodide of Iron 397
— Lemons 399
— Mulberries 399
— Orange Flower 397
— — Peel 396
— Phosphate of Iron . . . 398
— Poppies 400
— Red Poppy 401
— — Roses 401
— Rhubarb 400
— Senna 402
— Squill 402
— Tolu 403
Syrupus 396
— Aurantii 396
— — Floris 397
— Chloral 397
— Ferri Iodidi 397
— — Phosphatis 398
— Hemidesmi 399
— Limonis 399
— Mori 399
— Papaveris 400
— Rhei 400
— Rhœados 401
— Rosæ Gallicæ 401
— Scillæ 402
— Sennæ 402
— Tolutanus 403
— Zingiberis 403

TABACI Folia 403
Tabellæ Nitroglycerini . . 404
— Trinitrini 404
Tablets of Nitroglycerine . . 404

PAGE
Tamarind 404
Tamarindus 404
Tannic Acid 28
— — Glycerine of 189
— — Lozenges 437
— — Suppositories . . . 393
— — — with Soap 393
Tar 313
— Ointment of 451
Taraxaci Radix 404
Tartar, Cream of 333
— *Emetic* 54
Tartarated Antimony . . . 54
— — Ointment of 444
— Iron 183
— Soda 364
Tartaric Acid 29
*— — Solution of 486
Tartrate of Potassium . . . 332
— — Acid 333
— — *and Sodium* 364
Terebinthina Canadensis . . 405
*Test Solutions 479
*— — for Volumetric Estimations 487
Theina 82
Theobroma, Oil of 294
Theriaca 405
**Thiosulphate of Sodium* . . 476
Thus Americanum 406
Thymol 406
*Tin, Granulated 478
Tinctura Aconiti 407
— *Actææ* 415
— Aloes 407
— Arnicæ 408
— Asafœtidæ 408
— Aurantii 408
— — Recentis 409
— Belladonnæ 409
— Benzoini Composita . . 410
— Buchu 410
— Calumbæ 410
— Camphoræ Composita . . 411
— Cannabis Indicæ . . . 411
— Cantharidis 411
— Capsici 412
— Cardamomi Composita . 412
— Cascarillæ 413
— Catechu 413
— Chiratæ 413
— Chloroformi Composita . 414

PAGE
Tinctura Chloroformi et Morphinæ 414
— Cimicifugæ 415
— Cinchonæ 415
— — Composita 416
— Cinnamomi 416
— Cocci 417
— Colchici Seminum . . . 417
— Conii 417
— Croci 418
— Cubebæ 418
— Digitalis 418
— Ergotæ 419
— Ferri Acetatis 419
— — Perchloridi 420
— — *Sesquichloridi* . . . 420
— Gallæ 420
— Gelsemii 420
— Gentianæ Composita . . 421
— Guaiaci Ammoniata . . 421
— Hyoscyami 422
— Iodi 422
— Jaborandi 422
— Jalapæ 423
— Kino 423
— Krameriæ 423
— Laricis 424
— Lavandulæ Composita . . 424
— Limonis 425
— Lobeliæ 425
— — Ætherea 426
— Lupuli 426
— Myrrhæ 426
— Nucis Vomicæ 427
— Opii 427
— — Ammoniata 428
— Podophylli 428
— Pyrethri 428
— Quassiæ 429
— Quininæ 429
— — Ammoniata 429
— Rhei 430
— Sabinæ 430
— Scillæ 431
— Senegæ 431
— Sennæ 432
— Serpentariæ 432
— Stramonii 433
— Sumbul 433
— Tolutana 433
— Valerianæ 434
— — Ammoniata 434

PAGE
Tinctura Veratri Viridis . . 435
— Zingiberis 435
— — Fortior 435
Tincture of Acetate of Iron . 419
— Aconite 407
— *Actæa* 415
— Aloes 407
— Arnica 408
— Asafœtida 408
— Belladonna 409
— Benzoin, Compound . . 410
— Buchu 410
— Calumba 410
— Camphor, Compound . . 411
— Cantharides 411
— Capsicum 412
— Cardamoms, Compound . 412
— Cascarilla 413
— Catechu 413
— Chiretta 413
— Chloroform, Compound . 414
— — and Morphia 414
— Cimicifuga 415
— Cinchona 415
— — Compound 416
— Cinnamon 416
— Cochineal 417
— Colchicum Seeds . . . 417
— Cubebs 418
— Ergot 419
— Foxglove 418
— Fresh Orange Peel . . . 409
— Galls 420
— Gelsemium 420
— Gentian, Compound . . 421
— Ginger 435
— — Strong 435
— Green Hellebore 435
— Guaiacum, Ammoniated . 421
— Hemlock 417
— Henbane 422
— Hop 426
— Indian Hemp 411
— Iodine 422
— Jaborandi 422
— Jalap 423
— Kino 423
— Larch 424
— Lavender, Compound . . 424
— Lemon Peel 425
— Lobelia 425
— — Ethereal 426

PAGE
Tincture of Myrrh 426
— Nux Vomica 427
— Opium 427
— — Ammoniated 428
— Orange Peel 408
— Pellitory 428
— Perchloride of Iron . . . 420
— Podophyllum 428
— Quassia 429
— Quinine 429
— — Ammoniated 429
— Rhatany 423
— Rhubarb 430
— Saffron 418
— Savin 430
— Senega 431
— Senna 432
— Serpentary 432
— Squill 431
— Stramonium 433
— Sumbul 433
— Tolu 433
*— Turmeric 479
— Valerian 434
— — Ammoniated 434
Tinnivelly Senna 361
Tobacco Leaf 403
Tolu, Balsam of 69
— Syrup of 403
— Tincture of 433
Tops, Broom 359
— Savin 349
Toughened Caustic 62
Tragacanth 436
— Mucilage of 278
— Powder of, Compound . . 340
Tragacantha 436
Treacle 405
Tritici Farina 171
Trochisci Acidi Benzoici . . 437
— — Tannici 437
— Bismuthi 438
— Catechu 438
— Ferri Redacti 439
— Ipecacuanhæ 439
— Morphinæ 440
— — et Ipecacuanhæ . . . 440
— Opii 441
— Potassii Chloratis . . . 441
— Santonini 442
— Sodii Bicarbonatis . . . 442
*Turmeric 478

PAGE
*Turmeric Paper 478
*— Tincture of 479
Turpentine and Acetic Acid, Liniment of 227
— Canada 405
— Confection of 123
— Enema of 145
— Liniment of 227
— Oil of 294
— Ointment of 454

UNGUENTUM Acidi Borici 443
— — Carbolici 443
— — Salicylici 443
— Aconitinæ 444
— Antimonii Tartarati . . 444
— Atropinæ 444
— Belladonnæ 444
— Calaminæ 445
— Cantharidis 445
— Cetacei 445
— *Citrinum* 449
— Chrysarobini 446
— Creasoti 446
— Elemi 446
— Eucalypti 446
— Gallæ 447
— — cum Opio 447
— Glycerini Plumbi Subacetatis 447
— Hydrargyri 447
— — Ammoniati 448
— — Compositum 448
— — Iodidi Rubri 448
— — Nitratis 449
— — — Dilutum 449
— — Oxidi Rubri 449
— — Subchloridi 450
— Iodi 450
— Iodoformi 450
— *Paraffinum* 300
— Picis Liquidæ 451
— Plumbi Acetatis 451
— — Carbonatis 451
— — Iodidi 451
— Potassæ Sulphuratæ . . 452
— Potassii Iodidi 452
— Resinæ 452
— Sabinæ 453

PAGE
Unguentum Simplex . . . 453
— Staphisagriæ 453
— Sulphuris 454
— — Iodidi 454
— Terebinthinæ 454
— Veratrinæ 455
— Zinci 455
— — Oleati 455
Uvæ 455
— *Passæ* 455
—Ursi Folia 456

VALERIAN, Infusion of . 211
— Rhizome 456
— Tincture of 434
— — Ammoniated 434
Valerianæ Radix 456
— Rhizoma 456
Valerianate of Sodium . . 375
— Zinc 470
Vapor Acidi Hydrocyanici . 457
— Chlori 457
— Coninæ 457
— Creasoti 458
— Iodi 458
— Olei Pini Sylvestris . . 458
Veratri Viridis Radix . . . 459
— — Rhizoma 459
Veratria 459
Veratrina 459
Veratrine 459
— Ointment of 455
*Verdigris 477
Vinegar 2
— of Cantharides 2
— of Squill 3
Vinum Aloes 461
— Antimoniale 461
— Aurantii 461
— Colchici 462
— Ferri 462
— — Citratis 462
— Ipecacuanhæ 463
— Opii 463
— Quininæ 463
— Rhei 464
— Xericum 464
Volatile Oil of Nutmeg . . 289
*Volumetric Estimations, Test Solutions for . . 487

PAGE
*Volumetric Solution of Bichromate of Potassium 489
*— — Hyposulphite of Sodium 490
*— — Iodine 491
*— — Nitrate of Silver . . 492
*— — Oxalic Acid 493
*— — Soda 494

WARM Plaster 140
Warming Plaster 140
Water 55
— Anise 56
— Camphor 57
— Caraway 57
— Cherry-Laurel 59
— Chloroform 57
— Cinnamon 58
— Dill 56
— Distilled 58
— Elder Flower 60
— Fennel 58
— *Lime* 236
— *Lithia* 246
— Orange Flower 56
— Peppermint 59
— Pimento 60
— *Potash* 252
— Rose 60
— *Soda* 255
— Spearmint 59
Wax Paraffin 299
— White 102
— Yellow 102
*Weights and Measures of the British Pharmacopœia . 498
*— — Metric System . . . 499
Wheaten Flour 171
White Marble 265
— Mustard Seeds 362
— *Precipitate, Ointment of* . 448
— Wax 102
Wine, Aloes 461
— Antimonial 461
— Citrate of Iron 462
— Colchicum 462
— Ipecacuanha 463
— Iron 462

PAGE
Wine, Opium 463
— Orange 461
— Quinine 463
— Rhubarb 464
— Sherry 464
Wood Charcoal 96
— Guaiacum 193
— Quassia 341
— Red Sandal 334
— Sandal, Oil of 293
— *Red Sanders* 334
Wool, Cotton 192

YEAST, Beer 103
— Poultice 100
Yellow Jasmine 187
— *Mercurial Lotion* . . . 259
— Mercuric Oxide 197
— Oxide of Mercury . . . 197
— *Prussiate of Potash* . . 327
— Wax 102
Yolk of Egg 298

ZANZIBAR Aloes . . . 39
Zinc 471
— Acetate of 465
— Carbonate of 466
— — *Native* 84
— Chloride of 467
— — Solution of 257
— Granulated 472
— Ointment of 455
— Oleate of 281
— — Ointment of 455
— Oxide of 468
— Sulphate of 469
— Sulphocarbolate of . . . 470
— Valerianate of 470
Zinci Acetas 465
— Carbonas 466
— Chloridum 467
— Oxidum 468
— Sulphas 469
— Sulphocarbolas 470
— Valerianas 470
Zincum 471
— Granulatum 472
Zingiber 472

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KING'S COLLEGE LONDON

Methods to adopt in making a given quantity of B.P. Chemica

1) Make 100 grains Bismuthi Oxidum

$$\underbrace{2(Bi\,ONO_3\cdot H_2O)}_{610} + 2NaOH = \underbrace{Bi_2O_3}_{466} + 2NaNO_3 + 3H_2O.$$

Then :- 466 : 100 :: 610 : x = 131 grains $BiONO_3\cdot H_2O$.

The B.P. orders 4 pints Liq Sodae to 1 pound Bis Subnit

∴ 7000 grs : 131 grs :: 80 fl oz : x =

1½ fl oz (nearly) Liq Sodae

2. To make one ounce of Pot Acetas.

As the % of water in Pot: Carb: is variable the calculat must be based on the amount of the acetic acid.

$$\underbrace{2HC_2H_3O_2}_{120} + K_2CO_3 = \underbrace{2KC_2H_3O_2}_{196} + CO_2 + H_2O.$$

Then 196 : 437.5 grs :: 120 : x

= 268 grs $HC_2H_3O_2$.

As the acetic acid is only 33% this amount must be multiplied by 3

268 × 3 = 804 grs Ac: Aceticum

If it is required to bring this to volume

Then $\frac{804}{1.044}$ = Vol: in grain measures.

or $\frac{804}{1.044 \times .91}$ = minims of Acid Aceticum reqd to be neutralized with K_2CO_3 to produce 437.5 grains Pot: Acet: P.B.